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A Clinical Lecture
ON
SLEEPLESSNESS.

Delivered at the Medical Graduates' College and Polyclin on Jan. 17th, 1900.

BY SIR WILLIAM H. BROADBENT, BART., M.D., F.R.C.P. LOND., F.R.S.,

PHYSICIAN EXTRAORDINARY TO H.M. THE QUEEN; PHYSICIAN IN ORDINARY TO H.R.H. THE PRINCE OF WALES; CONSULTING PHYSICIAN TO ST. MARY'S HOSPITAL.

GENTLEMEN,—Sleeplessness is one of the torments of our age and generation and we are daily called upon to treat it, but I could not well bring cases before you for demonstration. While, however, I have no actual patients to present and shall not even read notes of cases, it is incumbent on me to treat sleeplessness from a clinical point of view. I am fortunately, therefore, under no necessity to discuss the various theories of sleep, nor have I to entertain you with speculations on the neuron or as to the behaviour of dendrons during sleep such as those which now seem to be the inevitable introduction to all questions in which the nervous system is concerned—to attempt to explain, in effect, the *ignotum per ignotius*, which has a perennial fascination.

One word, however, must be said as to difference in the vascular condition of the cortex of the hemisphere in the sleeping and the waking state. According to old experiments the cerebral cortex is in a condition of anæmia during sleep, and it has been assumed that the blood is shut off by contraction of the arterioles, but we have been assured by Dr. Leonard Hill that the vaso-motor regulation of the blood-supply does not extend to the brain, that no nerves are distributed to the cerebral blood-vessels, and that it has been demonstrated by experiment that the blood-pressure within the cranium is entirely controlled by the ebb and flow of the blood in the splanchnic area. On the other hand, my friend Dr. Alexander Morison shows beautiful preparations of arteries from the pia mater in which these vaso-motor nerves are conspicuously visible, and independently of this direct evidence, one was disposed to wonder why these vessels had muscular walls if there were no nerve-supply. It seems to me that the only possible explanation of many of the disturbances of the functions of the brain from peripheral irritation of various kinds is a reflex influence of the cerebral circulation.

In this lecture I propose to limit myself to the consideration of sleeplessness where it constitutes the special complaint on account of which the patient seeks advice. To speak of loss of sleep where it is only one among many symptoms of disease of brain, lungs, or heart, or one of the effects of fever or other acute affection, would require two or three lectures.

Sleep consists essentially of a suspension of the functions of the higher centres of sensation, or rather perception, involving inaction of the corresponding motor centre. The reflex action of the cord persists as well as the vital reflexes concerned in respiration and the action of the heart. Reflexes also survive in which there is a considerable degree of purposive coördination; the extremities will be withdrawn from a source of irritation and we turn over in bed and may adjust bedclothes without waking. The Indian thief will steal the blanket from under the sleeper by so tickling him that he rolls over first in one direction and then in another. While sensation is suspended a loud noise or a bright light, a shake or a sharp impression on the surface, will penetrate the barrier opposed to impressions and rouse the sleeper, and many persons have the faculty of waking at a given hour. Most of us, indeed, can wake up to catch an early morning train in case of need. The intensity of the respective sensory impression required to disturb sleep varies greatly in different individuals and in the same person at different times. A susceptibility to the disturbing influence of light and sound can be cultivated by sleeping in darkened rooms and with closed curtains. On the other hand, habit enables a Londoner to sleep, not only in spite of the more or less continuous roar of traffic, but through the thunder of a railway waggon or a post-office van tearing along a quiet street, and many persons can sleep in broad daylight.

It may be said at once that the treatment of sleeplessness does not resolve itself into a choice of drugs. To compel sleep by opiates or sedatives is not to cure sleeplessness. It is true that when the brain has been overtaxed by engrossing work, or the nervous system has been shattered by a severe shock or exhausted by overwhelming anxiety or outworn by excitement, or the habit of sleep has been broken by long and anxious vigils over a sick bed, a judiciously selected remedy may quiet the molecular vibrations and restore self-control to the brain and so break the wakeful habit and renew the patient's confidence. Setting aside these exceptional cases the sedative, whatever it may have been, may leave the cause of sleeplessness untouched, and while this remains in full operation the nervous system becomes accustomed to the drug and a larger and larger dose is required. Then, moreover, the effects of the drug are not confined to the production of sleep. The substance is carried by the blood everywhere and it may check secretions, derange digestion, impair the peristaltic vigour of the stomach and intestine, affect the circulation and deteriorate the blood, and interfere with the nutrition of the tissues. One effect all drugs have, and always have—they diminish the resistance and impair the manhood of the individual. It is not only that he has experienced relief and that he longs for it again, but he will not endure with patience and fortitude a privation of sleep which he would formerly have thought unimportant. So it goes on until the morphia habit is established or the patient becomes a slave to chloral or sulphonal or trional. Nothing is easier than to obtain a cheap kind of credit by prescribing a sedative, especially if its name is new to the patient and he can be assured that he is not taking an opiate properly speaking; but it may be the first step in the downward course towards suffering, bodily and mental, of the most terrible kind. From what I have seen I should prefer to be a victim to morphia or to opium rather than to chloral or to sulphonal or to trional. If the reaction from the opium intoxication is painful there is at any rate a positive pleasurable exaltation, whereas the best that chloral and sulphonal can give is oblivion, and there is not only depression but a pitiable loss of volition. The wretched subject cannot make up his mind on the most trivial question, and when he has come to a decision he regrets it immediately. Besides this indecision there is loss of memory, and either from this loss of memory or from impairment of the moral sense no dependence is to be placed on his statements. The heart and the vessels lose their tone, the circulation becomes languid, and the tissues grow soft and flabby, till finally the victim is incapable alike of effort and enjoyment. Unfortunately these drugs are placed within the reach of all in the form of syrups and tabloids; there is no restriction on their sale, and they are constantly taken on the advice of chemists or friends. The medical man who prescribes any of them has thus no further control over their administration and incurs therefore a terrible responsibility.

The essential preliminary to the treatment of sleeplessness is the recognition of its cause in the particular case. We have therefore to consider the causes of sleeplessness. Of these the most important undoubtedly is the original constitution of the nervous system. The capacity for sleep and the readiness to sleep vary enormously in different persons. Some can command sleep at a moment's notice almost at any time and under any circumstance; with others sleep always requires careful wooing. But while there are inborn differences in this respect manifested even in infancy, much can be done to bring the nervous system into a condition which favours sleep or the reverse, and this is a point always to be borne in mind in the treatment of sleeplessness. Of all the influences which tend to bring the nervous system into a state in which sleep is ready, sound, and refreshing, the most important are fresh air and exercise. A sedentary mode of life has a contrary effect. Besides, therefore, protecting the light sleeper from all causes of sleeplessness and removing any which may be identified, it may sometimes be necessary to revolutionise his habits and to lay down special rules as to his mode of life. The old distich "After dinner rest awhile, after supper walk a mile" seems to have been written for the benefit of such an individual.

These naturally bad sleepers are greatly to be pitied. The slightest change in the bed or of pillows or coverings will give a bad night; the pillow must be high and firm for some,

and it must be soft and low for others. Sleep in a strange room is for a time impossible. A chink in a shutter, or a badly-fitting blind, or ill-adjusted curtain admitting a single beam of light will cause some to wake up at daybreak. Some must have absolute darkness, others require a certain degree of artificial light. It is in such cases that the great difficulty arises of deciding whether sedatives of one kind or another may be given. Much depends on the kind of sleeplessness. If the patient can lie quiet and, while sleepless, remain tranquil, I should hesitate to give drugs. He has rest even if he does not sleep and very commonly there is sleep of which he is not conscious. An occasional dose may be given to parry the effects of any unusual excitement or fatigue. The choice of the drug would be determined a good deal by the experience of the individual, but if the pulse-tension were high chloral would be indicated as a vascular relaxant; if it were low, paraldehyde or bromide or some such combination as morphia and hyoscyamus. When the patient tosses and fidgets and gets up looking worn and tired there is more need to have recourse to sedatives and it is extremely likely that their use will become more or less habitual. If possible bromides should be the drugs employed. There are cases in which a moderate dose of ammonium bromide just seems to bring the irritable and sensitive nervous system to an average condition and I have known patients to take it indefinitely without apparent injury. I cannot say this of any of the chloral or sulphonal class of drugs.

There are conditions of the circulation which interfere with sleep. Perhaps the most easily recognised of these is coldness of the feet. Anæmic girls are often kept awake by cold feet, and in debility from other causes coldness of the extremities may prevent sleep. For sleeplessness so caused a hot bottle is the obvious remedy, or, perhaps better, enveloping the legs in warm flannel up to and above the knees, which will usually be felt to be cold as well as the feet. Such patients should be warned not to dawdle while undressing but to change and get into bed quickly, and the feet should be vigorously rubbed. To anything of this kind, however, they are indisposed by the very languor and weakness which give rise to the coldness of the extremities. A great help to sleep in patients suffering from sluggish circulation is a little very hot and strong beef-tea or hot milk on going to bed. Stimulants should be avoided in the case of the young; there is less objection to them in elderly people, but in them the stimulant should not be relied upon simply as such, but should be given in the form of a hot drink, such as negus or spirit and hot water. Cold feet may prevent sleep when there is no weakness of any kind after hard intellectual work, especially when carried on late into the night. It is not a mere negative coldness which can be rectified by supplying warmth; external heat seems to be rejected and the feet refuse to be warmed by it. There is, in fact, spasm of the arterioles excluding the blood, just as when the feet are stone cold in fever while the temperature in the mouth or rectum is 103° F., and it may be pointed out that when the extremities are warmed by the application of external heat the warmth is not simply supplied from without; the vessels are relaxed by the heat applied to the surface and the warm blood is admitted. Under the circumstances we are considering, the reflex vaso-dilatation does not take place and the hot bottle, even if available, is of no use. The resource is friction, but this has to be persevered with for some time to be effectual. To stand in cold water for a few minutes before rubbing the feet is an excellent expedient, resorted to, as I have found, by many hard-working friends and to which I can bear personal testimony. Hot beef-tea or milk would be invaluable, or even a drink of hot water, but brain-workers are too much engrossed with the task in hand for forethought to provide these remedies. I would particularly warn my young hearers who may be sleepless after hard work against opiates. They may be most effectual and may not seem to disturb the digestion or interfere with work next day, but I think the judgment is liable to be impaired so that dominant ideas are not adequately tested and get the upper hand, while the ultimate results may be disastrous.

Sleeplessness may be due to an exactly opposite condition—a hot burning feeling in the feet which, however, more commonly wakes the patient up than prevents his getting to sleep. It may be part of a general sense of heat and discomfort attending gout, or sub-acute rheumatism, or rheumatoid arthritis, when the feet may be really hot, or the sensation of heat may be subjective only, while the feet are cold to the touch and deep crimson in colour. Patients will often insist on putting the feet out of bed, but the relief thus obtained is only partial and temporary. The treatment of the sleeplessness will be that of the underlying condition. If an opiate is required, as may be the case, especially when there is pain, an old-fashioned Dover's powder is one of the best vehicles and there is little danger of its laying the foundation of the opium habit. Or phenacetin or antipyrin may afford relief and find a legitimate opportunity of usefulness.

Conditions of the circulation which do not give rise to such conspicuous effects are very frequently attended with sleeplessness. One of these is high arterial tension. It may be supposed that the high blood-pressure does not permit the arterioles to shut off the supply and reduce the cortical circulation. Whatever the explanation may be the cases are very common in which high arterial tension and sleeplessness go together and in which the lowering of the one affords relief to the other. Since the presence in the blood of nitrogenised waste is one cause of high tension the treatment dictated is to minimise its formation and promote its elimination. The patient will be put on a regulated diet in which the proportion of animal food will be adjusted to the individual requirements. In this the patient's previous habits and dietetic idiosyncracies must be taken into account. Nothing can be more absurd than to lay down rules to be applied indiscriminately to all sorts of constitutions. A glass of water night and morning is usually a good thing. Among the most efficacious of the eliminants is a mercurial aperient which, as it may have to be repeated once or twice a week for a long time, must be mild. A single grain of calomel or one or two mercurial pills or mercury with chalk with colocynth and hyoscyamus, or compound rhubarb pill, is usually sufficient and may be taken twice a week indefinitely. The eliminant action of the mercurial aperient may be followed up by mild salines or by alkaline tonics.

Rare instances are met with in which an exactly opposite condition—extremely low tension—appears to give rise to sleeplessness, or at any rate makes sleep in the horizontal position difficult or impossible. In the sitting position these patients can scarcely keep awake; at any period of the day they will drop off to sleep if they sit down and try to read; and even over the morning newspaper and after dinner they will sleep indefinitely until they go to bed and lie down when at once they are wide-awake. It seems as if the toneless vessels were incompetent to resist the slight increase of pressure within the cerebral vessels when the patient lies down. The treatment here must obviously be tonic.

By far the most common cause of sleeplessness is indigestion in its various forms, and the particular incident of indigestion which seems to be the most active antagonist of sleep is flatulence, especially gaseous distension of the stomach. Apparently it is mechanical pressure or stretching which prevents sleep, since sleep often at once follows the eructation of a few cubic inches of gas. The volume of gas displaced is quite insufficient to affect the splanchnic circulation, and it is not easy to understand in what direction the pressure operates which produces the result. There may be extreme dilatation of the stomach from pyloric obstruction without serious influence on sleep, and whenever the stomach has been displaced downwards, so that the lesser curvature is defined on the abdominal wall, or can be followed by palpation, I have found that the effect on sleep was little marked. When, on the other hand, the upper line of gastric resonance has been high, corresponding with the fifth space and the base of the ensiform, sleeplessness is common even though the area of resonance may not be very extensive. It does not follow that when flatulence is the cause of sleeplessness the patient should suffer from the ordinary symptoms of flatulent dyspepsia, epigastic pain or discomfort, and frequent eructations. Flatulent distension of the stomach produces its worst effects when we are not conscious of its existence. When we suffer from flatulence in the ordinary sense of the word what we are conscious of is not the flatulence itself but the effort to get rid of or displace it. When it is tolerated by the stomach and no effort is made to expel it its more serious effects are produced—anginoid pain in the cardiac region, palpitation of the heart, and sleeplessness. It will be clear from what has been already said that the form of dyspepsia attended with sleeplessness is that in which the special characteristic is atony of the muscular walls of the stomach, allowing of the passive distension of the organ. A

further inference will be obvious—that it is in brain-workers whose nervous energy is diverted from the work of digestion, or in those whose mode of life is sedentary and whose general nerve-tone is low, or in persons depressed by anxiety and worry, that this form of dyspepsia is most liable to occur. One way, indeed, in which grief and worry and anxiety give rise to protracted sleeplessness is through the effects on digestion. Sleep will come to the relief of grief and even anxiety gives way to weariness and sleep, but nothing is more certain than the effect of mental depression on digestion, and when the sufferer is roused by flatulence or abdominal discomfort the distressing or agitating idea takes possession of the mind and banishes further sleep. Flatulent dyspepsia, again, is one of the causes of the sleeplessness which is said to belong to old age. It is not old age as such to which sleeplessness is to be attributed but to the infirmities attending it—to vascular conditions or functual derangements of one kind or another of stomach, bowel, or bladder. Flatulent dyspepsia very often interferes with sleep on first going to bed and may keep the sufferer awake indefinitely. This faculty it shares with various causes of sleeplessness, but one very common variety of sleeplessness is highly characteristic of flatulence. The patient, possibly a good sleeper naturally, falls asleep on getting into bed and then wakes punctually night after night at a given hour, at two o'clock, three o'clock, or four o'clock as the case may be, and then lies awake for the rest of the night. The explanation is that the last meal has not been entirely passed on into the duodenum. Fermentation takes place in the food which remains in the stomach and after a certain time sufficient gas and acidity have been developed to disturb the sleep.

The treatment of sleeplessness due to flatulence is, of course, that of the dyspepsia. This in itself would demand an entire lecture for its discussion and you will not expect me to enter upon it. All I need do is to enumerate the expedients for preventing the interference with sleep. The simplest of these is a tumbler of hot water at bedtime, and it is usually effectual. The stomach is stimulated to contract, much of the gas present in it at the time is expelled, and any fermenting contents are swept on into the small intestine where the antiseptic bile checks further fermentation and where flatulence gives rise to less disturbance. The hot water should be taken before undressing so that it may have time to clear out the stomach and expel the gas before the patient lies down. Should hot water not be sufficient sal volatile and carbonate of soda may be taken before it or an alkaline carminative draught may be given—carbonate and sulpho-carbolate of soda with aromatic spirit of ammonia, compound tincture of chloroform, or ether and peppermint or camphor water and sometimes bromide of sodium or ammonium may be added with advantage for a time. Friction over the epigastrium or between the shoulders may help to disperse the flatulence. I do not think it is well to allow even so simple and harmless a matter as a nightly dose of hot water to grow into a habit. As a rule it should not be continued for more than a week at a time as the response of the stomach becomes imperfect. It has seemed to me that an alkaline draught can be taken longer without losing its effect. I know several patients who wash out their own stomach at bedtime whenever they have sensations which lead them to apprehend a bad night.

Some individual causes of sleeplessness must be considered. Tea and coffee are looked upon as powerful agents in the prevention of sleep and there are no doubt many here who have found a cup of strong tea or coffee an excellent preparation for an evening's work. Certain kinds of tea and really good coffee do undoubtedly act as stimulants to the brain; they help the tired nurse to keep awake and fresh, and keep sleep at bay for the student who is working far into the night. They may, indeed, produce a condition of intense wakefulness. When, however, it is stated that a cup of tea in the afternoon will keep a given person awake all night, I doubt very much whether it is the tea, as such, which is responsible for the result. Imagination often plays a very influential part in the effect. Let such a person be confidently assured that pure China tea, brewed for not more than two minutes, is innocent of such evil properties and he or she will often take it with impunity whether it conforms exactly to the description or not. But afternoon tea is a very common cause of flatulent dyspepsia and in this way may be responsible as the cause of protracted sleeplessness. So with the after-dinner cup of black coffee, it is often the dinner and not the coffee which disturbs the night's rest.

Influenza has familiarised us with sleeplessness of a most obstinate character. There is always asthenia, cardio-vascular and nervous, which must be borne in mind in the treatment. With the general effect on the nervous system there may be complications which contribute seriously to the prevention of sleep and may even interfere with the action of powerful opiates or sedatives. Among these is acute dilatation of the stomach, a not uncommon incident of an attack of influenza. It was present in the worst case of post-influenzal sleeplessness that I ever saw, in which there was not a wink of sleep for four days and nights. Sleeplessness following influenza must be treated as an acute affection and, unless there is speedy improvement under such tonics as arsenic or phosphorus, strychnine and quinine, together with measures for the relief of functional derangements, opiates may be given without hesitation and I think it better to have recourse at once to combinations of opium or morphine and hyoscyamus with carminatives than to try sulphonal, or trional, or chloral and bromides. In case of need morphine may be given hypodermically and it usually adds greatly to the efficiency to combine it with strychnine as well as atropine. The immediate effect of large doses of alcohol is torpor. A result of long-continued alcoholic excess is sleeplessness culminating in delirium tremens. The remedy here is total abstinence with considerable doses of strychnine or nux vomica and perhaps digitalis. At the same time the liver and stomach disorders resulting from the alcohol will demand attention as they may keep up the sleeplessness and are indeed frequently its main cause.

I do not know whether it is worth while mentioning some of the popular remedies for sleeplessness. Among them is the hop pillow which certainly sometimes seems to soothe. There is, again, the saffron bag applied to the pit of the stomach immortalised by Bulwer Lytton in "The Caxtons." Gently smoothing the hair is undoubtedly efficacious in many cases, as is also, but less frequently, sponging the burning palms. Dipping the face in cold water is one of the expedients of the worker late at night; some will sponge the entire head. Then there are the different ways in which people try to hypnotise themselves by watching and counting the invisible breath, slowly counting imaginary sheep as they pass through an imaginary gate, and the like. I have not ventured on the large subject of the employment of hypnotism. That it has its legitimate uses in inducing sleep I have no doubt. It has not been my good fortune to meet with a case where it has overcome the morphine habit or rescued the victim of chloral or sulphonal.

THE PROCESS OF DIGESTION AFTER RESECTION OF ABOUT SIX FEET OF THE SMALL INTESTINE.

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(*Translated for* THE LANCET.)

BEFORE proceeding further, the title of this paper requires some explanatory observations. The dimensions of the intestine when in the living body or when only just removed from it are, as every surgeon knows, subject to great variation. Surprisingly different results are obtained according as the bowel is measured in the completely collapsed condition or when containing gas and distended. In illustration of this mention may be made of an intestinal resection performed by me in a case of strangulated gangrenous hernia some weeks after the operation which is the subject of this paper. The piece of intestine as it lay on the table in the relaxed condition measured barely 50 centimetres (20 inches) in length, but when I, in order to test the resistance of the necrosed portion, filled the intestine with water, not using any additional force, the resected portion underwent elongation to 90 centimetres (36 inches). Trzebicky[1] has also called particular attention to these variations in the length of the intestine. The portion of intestine removed in resection is generally contracted to half

[1] Ueber die Grenzen der Zulässigkeit der Dünndarmresektion Archiv für Klinische Chirurgie, Band xlviii., p. 63.

its size, on which account measurements taken at that time must lead to delusive results. When I specify 192 centimetres as the length of the portion of the intestine resected in the present case it is to be carefully kept in mind that this number expresses the shortest length—i.e., what Trzebicky calls the deceptive measurement in the case of resected and contracted intestine. In order that accurate comparisons of this case with others may be made it is necessary at the outset to allude to this question of disparity in methods of taking measurements. For the due appreciation of a reduction of the absorbent area of the intestine there is an essential preliminary question: What proportion of the intestinal tract is removed in resection? The statements of text-books with regard to the total length of the intestine vary considerably; one[2] gives five and a half metres (18 feet) as the length of the small intestine, while another one[3] gives eight metres (26 feet). Beaunis and Bouchard specify as the limits four metres and eight metres (13 feet and 26 feet); Trzebicky finds values ranging from 561 centimetres to 870 centimetres (from 18 feet 5 inches to 28 feet 9 inches); Vierordt finds values ranging from 560 to 770 centimetres (from 18 feet 5 inches to 25 feet 5 inches), the length of the large intestine being given as from 130 to 230 centimetres (from 4 feet 3 inches to 7 feet 6 inches). According to Beneke the ratio existing between the total length of the body and the length of the intestine is that for every 100 centimetres of the former there are 387·5 centimetres of small intestine (without the duodenum) and 91·5 centimetres of large intestine. The height (*Körperlänge*) of our patient being 172 centimetres (5 feet 8 inches), in accordance with the last of these estimates the length of the small intestine might be taken to be 666 centimetres (21 feet 10 inches). The portion resected would therefore amount to rather less than one-third of the total length of the small intestine.

To what extent may the human intestine be removed without entailing, if not actual death from inanition, at least serious interference with the function of absorption persisting as long as food continues to be supplied? This question is of great interest to the physiologist and under certain circumstances is also of the utmost practical importance to the surgeon. Attempts to discover the answer have been made in a variety of ways and have led to valuable observations. Senn[4] first proceeded by the method of making experiments on animals. Of seven extensive resections of the small intestine performed on dogs and cats only two were available for the purpose in view. In both cases an intense, long-continued, and eventually fatal marasmus was the sequel of the resection. As the result of these experiments Senn came to the conclusion that excision of more than one-third of the whole length of the small intestine was an operation dangerous to life, productive of marasmus, and in this way fatal sooner or later. He also directed attention to a compensatory hypertrophy of the intestinal wall. Trzebicky assigned much wider limits for the intestinal resections permissible in dogs, supporting his conclusions by extensive resections of the small intestine performed by him on 28 animals. "Resections of half the small intestine were tolerated quite well; resections of two-thirds and upwards of the jejunum and ileum made such an inroad on the chemical and mechanical processes of digestion that the prolongation of life became impossible." There was incessant diarrhœa, followed at a later stage by vomiting; food was voided for the most part undigested, and in spite of a craving appetite the animals perished with symptoms of complete inanition. Trzebicky made an observation of even greater importance—namely, that the results of resection of the beginning of the jejunum were more serious than those of resection further in the direction of the ileo-cæcal valve. He attempted to apply to the human subject the results which he had obtained and declared that the shortest length of the small intestine being taken as 560 centimetres (18 feet 5 inches) resection of one-half of it—i.e., 280 centimetres—was quite permissible, presuming that no further complications were present. Monari[5] did not consider that the limits assigned by Trzebicky were conclusive. The inferences from his experiments, likewise made on dogs, even permitted a resection of seven-eighths of the small intestine without the production of important interference with metabolism. He believed that at least one-half of the small intestine might be removed in the human subject without the person's metabolism being influenced for the worse. In like manner with Senn, he also found hypertrophy and hyperplasia of the gastro-intestinal tract in the dogs which had been operated on.

The address delivered by Dreesmann[6] at the last congress of German naturalists and medical men held at Düsseldorf supplied us with a summary of the extensive resections of the intestine which have hitherto been performed on the human subject, a summary for which our thanks are due to that author. Including the one observed by himself he found a total of 26 cases in which more than one metre (39½ inches) of the small intestine had been removed. The ultimate results shown by the statistics were not particularly brilliant. Of the 26 patients 17 survived the operation and five of the latter suffered from disorders of the digestive tract, leaving 12 whose digestion remained subsequently unimpaired. It is to be noted that in 10 of the last-mentioned cases the portion of intestine removed was less than two metres (6 feet 7 inches). Up to the present time six resections of more than two metres of the bowel have been successfully performed—namely, 205 centimetres of the small intestine (Köberle), 208 centimetres of the small intestine (Kocher), 215 centimetres of the ileum (Dreesmann), 234 centimetres of the ileum (Shephard), and 310 centimetres of the ileum (Fantino). The sixth and most extensive resection was that made by Ruggi—namely, 330 centimetres of the small intestine in an eight-year-old boy on account of circumscribed peritonitis. Subsequent disorders of the digestive tract occurred in four of these extensive resections, only two remaining exempt from them—namely, the first performed one with 205 centimetres removed, and, strange to say, the last one with 330 centimetres removed. Evidently this most unusual case of Ruggi's can be explained only by the youthfulness of the patient in question, for in early life compensatory hypertrophy of the remaining intestine can establish itself much more easily than in the adult. From these statistics Dreesmann draws the inferences (1) that resections of less than two metres do not provoke any disorders of the digestive tract except when complications are present; and (2) that resections of more than two metres may be performed without subsequent disorders of the digestive tract, provided that the patients are young. The disorders referred to manifest themselves chiefly as diarrhœa.

Fantino's case[7] of resection of 310 centimetres (10 feet 2 inches) of the ileum deserves special consideration. The patient was a woman, 60 years of age. Notwithstanding her deficient assimilation of nutriment an increased supply of food succeeded in preventing emaciation. Fantino concludes his communication with the statement: "At all events, an important fact is now established—namely, the possibility of resecting three metres of the small intestine of an aged patient, provided that he or she possesses a normally-acting digestive apparatus."

With respect to the limits which are permissible in intestinal resection in the human subject it will be perceived from the foregoing short summary that opinions based on experiments made on animals present considerable divergencies. Extensive intestinal resections already performed on the human subject would supply a safer foundation on which conclusions might rest, but these operations are so few in number that any addition to the existing statistics of only six cases is very welcome. The account now to be given contains the essential particulars of the clinical history of a patient upon whom I operated in autumn, 1898, and whose small intestine was resected to the extent of about two metres, a length which nearly approaches the critical dividing line.

On the evening of Oct. 9th, 1898, there was a great disturbance and stabbing affray among Italians in Zürich, in the course of which a man, 23 years of age, was stabbed in the hypogastric region at 7 P.M. He immediately fell down and observed that his intestines protruded from the wound. His companions then conveyed him home, a distance of about 300 metres (320 yards); he did the whole journey on foot, being supported only underneath the arms. A medical man who was fetched an hour or two

[2] Gegenbauer.

[3] Joessel und Waldeyer: Lehrbuch der Topographisch-chirurgischen Anatomie, II. 1899.

[4] Experimentelle Beiträge zur Darmchirurgie. Deutsch von W. Sachs. Basel, 1892.

[5] Experimentelle Untersuchungen über die Abtragung des Magens und des Dünndarmes beim Hunde. Beiträge zur Klinischen Chirurgie, Band xvi.

[6] Berliner Klinische Wochenschrift, 1899, No. 16.

[7] Contributo allo Studio delle Estese Resezioni Intestinali, Gazzetta Medica di Torino, 5 Marzo, 1896, No. 10.

afterwards applied a first-aid dressing and directed the removal of the patient to the surgical klinik. The patient eventually arrived at the Surgical Poliklinik (i.e., out-patient department) in a municipal ambulance vehicle at 3 A.M. on Oct. 10th, accompanied by three other Italians who had been stabbed. He was a man of middle size, strongly built, and well nourished; his mind was quite clear; his pulse was fairly strong, regular, and over 100; his extremities did not feel particularly cold; his thoracic organs presented nothing unusual. After removal of the first-aid dressing there was found lying on the right hypogastric region a voluminous coil of small intestine the length of which was estimated at two metres (six feet seven inches). The greater part of it was in colour from deep dark blue to black; the serous membrane was quite lustreless. At 4 A.M.—namely, nine hours after the infliction of the wound—the patient was anæsthetised with ether. After shaving the hair, the abdominal walls and especially the edges of the wound, together with the piece of intestine, were cleansed and sterilised with solution of corrosive sublimate (1 in 5000). The protruding intestine was tightly grasped by the little wound and was already in part undergoing necrotic change, so that reposition was not to be thought of and the only hope lay in total resection. With some trouble I succeeded in drawing the two ends of the piece of bowel further out of the wound in order that the resection might be performed in healthy tissue. After application of Wölfler's compressors to the healthy parts of the bowel at both ends and the shutting off of the affected parts by means of Péan's clamps at both ends, the bowel was cut through with scissors at one side, the healthy extremity cleansed with pads of iodoform gauze, and then the long piece of mesentery divided as far as the healthy portion of the other end of the piece of bowel, Péan's clamps being applied in rapid succession to the line of attachment of the bowel. The bowel was now cut through at the other end in front of the Wölfler's compressor, and the numerous clamps on the mesentery were replaced by ligatures. The edges of the gap in the mesentery were united by a row of interrupted silk sutures, so that the two intestinal orifices were made to meet one another by folding the peritoneum. The suturing of the two ends of the bowel was done in the following way. The edges of the serous membrane were first of all united posteriorly with a continuous silk suture, then those of the mucous membrane were united round the entire circumference, and finally, the edges of the serous membrane were brought together anteriorly. For greater security a third layer was added, consisting of a row of Lembert sutures in the serous membrane. The original wound in the abdominal wall, the narrowness of which had hitherto been regarded as a desirable shutting-off of the abdominal cavity from external infection, was now for the first time enlarged by an incision about five centimetres (two inches) long for the purpose of replacing the sutured parts. It was then found that the incision in the skin had formed the real constricting ring, the primary peritoneal wound being notably larger. The wound was about three fingers' breadth above the centre of Poupart's ligament on the right side and parallel to it; its length was a centimetre and a half (0·6 inch); its edges were quite smooth. After replacement of the sutured parts no effusion of blood was found in the abdominal cavity, neither were there any indications of perforation of the bowel. The wound was therefore completely closed by a continuous silk suture of the peritoneum and an interrupted silk suture of the muscles and the skin. The dressing consisted of iodoform gauze and adhesive plaster. The length of the portion of intestine removed was 192 centimetres (six feet four inches). From the corrugation of the mucous membrane it was obvious that the whole of it belonged to the ileum.

On Oct. 12th a note was made to the effect that the patient had scarcely suffered at all from the consequences of the operation. There was some vomiting when the anæsthesia was brought to a close. The highest temperature hitherto attained was 37·8° C. (100° F.) on the evening of the second day. Some tea was given to him by the mouth on the day of the operation. On this day for the first time a stool was passed of semi-solid (*breiiger*) consistence. On the evening of the 14th the temperature, which had not hitherto been febrile, suddenly rose to 38·3° C. (101° F.) and a copious eruption of urticaria appeared over the whole body. On the 16th it was noted that there was a complete absence of abdominal symptoms: the urticaria, however, still continued. The evening temperature on the previous day had been 39·9° C. (103·8° F.), but there had been a reduction in the pyrexia since then and the evening temperature now was 37·5° C. (99·4° F.). On the 17th the dressings were changed for the first time. The wound was healthy and had firmly united; the sutures were removed. The urticaria was fading. On the 19th the urticaria had disappeared. On the 20th, while the dressing was being changed, some pus was evacuated by pressure on the lower part of the wound; there was no redness at that place and the pus evidently came from the muscular layer of the abdomen. On the 20th the patient's evening temperature rose to 38° C. (100·4 F.) in consequence of his having eaten a fried sausage that day; on the 21st, however, he presented no abdominal symptoms. On Nov. 3rd the patient felt perfectly well; his weight was 64 kilogrammes (140¾ lb.) and he was on full diet. He was allowed to stand on the 9th. His weight on the 15th was 68 kilogrammes (149½ lb.). On the 29th it was 73 kilogrammes (160½ lb.), so that he had gained nine kilogrammes (19¾ lb.) during the preceding three weeks. On Dec. 7th he was discharged recovered. He weighed 75 kilogrammes (165 lb.), his appetite was always hearty, and his bowels acted regularly almost every day. The young man's strength was good and he presented an appearance of exuberant health. He would have willingly resumed his work as a hodman if want of employment in consequence of the winter season had not compelled him to return to Italy.

The foregoing clinical history unquestionably shows that in the case of a powerful, well-developed man, 23 years of age, the loss of nearly two metres of the ileum was tolerated without the slightest subsequent derangement of the health. On ordinary hospital diet the patient remained perfectly free from any troublesome symptom, not even diarrhœa being experienced. Only one complication interrupted the normal progress of his recovery—namely, the appearance of urticaria over his whole body on the fifth day after the operation, this being a complaint from which he had never previously suffered. The relationship of cause and effect between the exanthematous condition and the immediately preceding operation on the intestine may be taken for granted, because disorders of the digestive organs often lead, both by their purely reflex and their chemical effects, to diffuse erythemata and urticaria.

In order that an opinion might be formed as to the conditions of intestinal absorption in the patient the assimilation of the ingested albumin and fat was followed up for nine consecutive days. I have to thank Dr. Plaut, scientific assistant at the Zürich Cantonal Hospital, for carrying out the researches which led to the results now exhibited. Special importance was attached to leaving the patient on ordinary diet as he was, with the most complete freedom of choice as regarded the nature and quantity of what he consumed. The investigations were made very laborious by the introduction of the last-mentioned considerations, but it was only when carried out in this way that they were able to give a correct insight into the habitual capacity for absorption possessed by the remaining portion of the intestinal tube. The man's daily consumption of food fluctuated between from 400 to 800 grammes (from 14 to 28 ounces) of milk, from 200 to 450 grammes (from seven to 16 ounces) of coffee, from 307 to 372 grammes (from 11 to 13 ounces) of meat broth, from 420 to 643 grammes (from 15 to 23 ounces) of soup, from 260 to 345 grammes (from nine to 12 ounces) of potatoes or 317 grammes (11 ounces) of maccaroni, or from 50 to 224 grammes (from two to eight ounces) of stewed apples, from 123 to 163 grammes (from four and a half to six ounces) of veal, from 48 to 100 grammes (from two to four ounces) of eggs, and from 83 to 315 grammes (from three to 11 ounces) of bread. His daily allowance of wine was 400 grammes (14 ounces).

For the purpose of showing the relations between these figures and their values under ordinary circumstances some notes are subjoined on the conditions of assimilation in the normal state. In forming an opinion as to the assimilation of albumin it is to be kept in mind that with ordinary mixed, not specially selected, diet a loss of from 6 to 10 per cent. in the fæces is always to be expected.[8] As regards fat, a waste of from 10 to 15 per cent. of the fat contained in the food is considered as normal and a matter of course when the quantity of fat in the food is small, as, for instance, from 25 to 40 grammes per day. But when, as in this case, the consumption of fat is larger and rises to 100 grammes of easily absorbed fat per day, then the foregoing percentage is much

[8] Von Noorden: Lehrbuch der Pathologie des Stoffwechsels, Berlin 1893.

TABLE SHOWING AMOUNTS OF NITROGEN AND FATS ABSORBED.

Day of observation.	Day of month.	Ingested.		Excreted.				Difference.			
				Urine.		Fæces.		Nitrogen.		Fat.	
		Nitrogen (grammes).	Fat (grammes).	Amount (grammes).	Nitrogen (grammes).	Amount in grammes (dried).	Nitrogen (grammes).	Fat (grammes).	Grammes.	Loss per cent.	Grammes.	Loss per cent.
First	Nov. 15th.	26·5	96·1	1870	18·24	105	4·97	17·17	+ 3·29	18·75	+ 78·93	17·86
Second	,, 16th.	27·8	93·7	1960	18·5	—	—	—	+ 9·3	—	+ 93·7	—
Third	,, 17th.	27·6	96·18	2560	16·41	59	3·5	15·35	+ 7·69	12·68	+ 80·75	15·95
Fourth	,, 18th.	27·6	95·6	1960	17·3	45	2·74	15·88	+ 7·56	9·02	+ 79·72	16·6
Fifth	,, 19th.	39·4	102·3	2220	21·2	72	4·24	16·84	+ 13·96	10·76	+ 85·46	16·45
Sixth	,, 20th.	36·4	108·7	2060	18·2	84	5·25	22·04	+ 12·95	14·42	+ 86·66	20·26
Seventh	,, 21st.	37·9	110·9	1850	15·8	44	2·98	10·51	+ 19·12	7·86	+ 100·39	9·47
Eighth	,, 22nd.	27·7	95·4	2470	20·5	46	2·64	11·33	+ 4·56	9·53	+ 84·07	11·87
Ninth	,, 23rd.	35·1	109·4	2210	18·4	65	3·64	17·3	+ 13·06	10·37	+ 92·1	15·84
—	—	286·0	908·2	—	164·55	—	29·96	126·42	+ 91·49	10·47	+ 781·78	13·91

too high, for not more than from 4 to 6 per cent. will be lost." In the table under the heading "Ingested" what is striking is the astonishingly large quantity of nitrogen that was taken as well as the quantity of fat. Special attention is called to the circumstance that the patient was under no compulsion to over-eat himself, but required food to that amount. The column headed "Excreted" shows a loss of nitrogen in the fæces corresponding to the upper normal limit. From the column headed "Difference" the average is found to be 10·47 per cent. On the other hand, the assimilation of fat is at a disadvantage, the average being 13·91 per cent. with oscillations between 9·47 per cent. and 20·26 per cent. of unassimilated fat. Riva Rocci[10] thoroughly tested the action of the bowel in Fantino's patient, a man, 60 years old, who had 310 centimetres (ten feet two inches) of his ileum removed. The loss of nitrogen in the fæces reached an average of 29 per cent., and the loss of fat an average of 23 per cent., with oscillations between 17·2 per cent. and 34·3 per cent. The column headed "Difference" also indicated a very great putting on of tissue during the short period occupied by the observations. Making use of the clinical history and the experiments on assimilation, let me now endeavour to state in precise terms the influence which the absence of these two metres of ileum exercised in the processes of absorption. If we adhere to the moderate estimate that not less than 192 centimetres of the bowel were resected, and if we take into consideration only the clinical history, the excellent condition of the patient at the time of his discharge from hospital and his remarkable increase in weight allow us to give a full and complete assent to the opinion formed on statistical grounds—the opinion, namely, that resections of the ileum with removal of two metres of its length are in no way dangerous to the organism so far as the digestive process is concerned. If, however, we base our inquiry on the experiments made in assimilation of food they render us more cautious in forming an opinion, although they may perhaps not succeed in contradicting the above-mentioned inferences. By the use of an appropriate dietary it might be possible eventually to make up for the impaired absorption of fat.

Now for the subsequent history of the case. In the beginning of 1899 I endeavoured to obtain information as to the patient's condition during the period that had then elapsed. In the end of January I received from Italy a letter from the hand of the patient himself in which he drew a very dismal picture of his state at that time. The slightest exertion fatigued him to such a degree that after doing a very small amount of work he often had to take to his bed immediately. The only food which he could take was veal, meat broth, and milk. Out of consideration for the poverty of his family he often tried to take the ordinary food of the place, but these attempts were always followed by severe abdominal pains, not attended, however, by diarrhœa. This unfavourable report prevented me from immediately publishing the case last spring. At one time I thought that the subjective colouring of the report might, perhaps, be far too strong, but in view of the alleged deterioration in the patient's condition I considered that it was absolutely necessary to wait for a further opportunity of observation. It was found, however, that the procuring of more information presented great difficulties. Letters of inquiry sent to the patient remained unanswered. At last, in the beginning of June, eight months after the operation, I received from the patient's place of residence, through a reliable objective channel, the following communication, for which I was greatly obliged.

My informant, after a long search, was at last fortunate enough to find the patient. He (the patient) was not indoors but was at work in a field at a moderate distance from his house. He was fairly satisfied with his condition at the time and could do a little work, but he worked slowly and with many intervals for rest. He lived principally upon broth, soup, and animal food. To his great vexation he was quite unable to tolerate solid food, such as bread, polenta, cheese, &c. His weight at that time was 72 kilogrammes (158½ lb.); it was 75 kilogrammes when he left the hospital, so that there had been a loss of three kilogrammes.

This result, observed at a late stage of the case, may serve as a warning against hasty and too optimistic views with regard to the effects which extensive resections of the intestine produce upon the processes of absorption. Riva Rocci in his memoir on Fantino's case has cautiously expressed his conclusions in terms to the effect that resection of three metres of the small intestine in an elderly person interferes with the intestinal absorption, but not to the extent of constituting a danger for an individual who leads a quiet, easy life and has sufficient food. I am in a position fully and completely to apply this conclusion with its saving clause to my case of less extensive resection.

The question has now to be answered: Does my case belong to the resections with less than two metres or to those with more than two metres of bowel removed? If we adhere to the moderate estimate of 192 centimetres of bowel removed, the case, by reason of the important influence exercised by the removal of this amount, occupies an entirely exceptional position in the group which does not show any disturbance of the digestive tract. It may, however, with equal correctness be included in the group of cases with a minimum length of two metres of bowel removed, the justification of which will be found in the introductory paragraph relative to the measurement of the bowel, and if this be done the case shows that, contrary to what has hitherto been the received opinion, the function of the digestive tract is seriously interfered with, even in young persons, by the resection of more than two metres of the bowel unless precautions are taken to secure the requisite sustenance.

Zurich.

[9] Von Noorden, p. 34.

[10] La Funzione Intestinale dopo una Resezione Estesa del Tenue, Gazzetta Medica di Torino, 13 Febbraio, 1896, No. 7.

FURTHER OBSERVATIONS ON PERNICIOUS ANÆMIA (SEVEN CASES): A CHRONIC INFECTIVE DISEASE;

ITS RELATION TO INFECTION FROM THE MOUTH AND STOMACH; SUGGESTED SERUM TREATMENT.

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I.—FORMER OBSERVATIONS.

MY former investigations[1] (from 1885 to 1888) had for their chief object to ascertain whether the pathological changes in pernicious anæmia were only an exaggeration of those met with in other forms of anæmia, or were, on the contrary, in any way distinctive. The conclusion come to was that they were in a high degree distinctive, serving to mark off the disease sharply and clearly from the anæmia of ordinary malnutrition, of wasting disease, or even of anæmia from loss of blood—the form of anæmia which in respect of degree of blood-change most closely approaches it. These distinctive changes denoted an excessive blood destruction as the characteristic feature of the disease; a blood destruction, moreover, which, as I found, is not merely an exaggeration of that occurring in health, but had special features of its own, such as could only be reproduced in their entirety by certain special blood poisons. The blood destruction resembled, however, that of health in one important respect—it occurred, as I showed, within the portal area—i.e., within the blood coming from the gastro-intestinal tract. The final conclusion I thus came to was that in all probability the blood-change in pernicious anæmia was the result of absorption of a special poison formed within, and absorbed from, some part of the gastro-intestinal tract; and I pointed out how this conclusion as to the local origin of the disease and its destructive character fitted in with two of the most prominent features of the disease, viz., (1) the relative frequency of gastro-intestinal symptoms (vomiting and diarrhœa) and of gastro-intestinal lesions; and (2) the frequency of disturbances in liver function, such as biliousness and jaundice—on the liver being thrown the chief burden in disposing of the various products arising from the blood destruction.

My second series of studies[2] (from 1888 to 1890) were directed to ascertain the nature of the gastro-intestinal changes. The results were not conclusive, but in general they confirmed my suspicions as to the special nature of the disease, for they showed that abnormal processes were here at work (the formation and excretion of certain ptomaines), but that these were not simply an exaggeration of ordinary fermentative and putrefactive processes, there being no increase of aromatic sulphates. I was thus again thrown back on the conclusion that something *special* underlay the disease, to which, however, was added the further conclusion—pointed to by the presence of ptomaines—that this was of the nature of an *infection*. In this connexion I pointed out how closely many of the characteristic clinical features, both general and local, fit in with the view of a special infection—viz., the obscure, insidious origin, the slow but yet sure progress towards the fatal issue, marked generally by toxæmic phenomena, such as fever, drowsiness, and sweatings, but chiefly by the continued progressive destruction of blood and locally by evidences of gastro-intestinal disturbance, such as sickness, retching, vomiting, or diarrhœa.

My final conclusion was that "the special factor required to initiate the symptoms peculiar to the disease is the presence, under certain favourable conditions, of specific organisms within the gastro-intestinal tract." "These favouring (local) conditions may be either localised and permanent, e.g., malignant disease, various forms and degrees of gastritis, atrophy of gastric glands, &c.; or general, more widespread, and removeable, e.g., unhealthy conditions of the mucous membrane of the stomach or intestine induced by the presence of intestinal parasites or by prolonged bad nourishment." "Successful infection having once occurred (favoured, e.g., by previous gastric trouble), the history is no longer one, or even primarily one, of gastric trouble, but of steadily increasing weakness with all the symptoms characteristic of pernicious anæmia."

[1] An Investigation into the Pathology of Pernicious Anæmia, THE LANCET, Sept. 22nd and 29th, 1888, pp. 555 and 608.

[2] The Causation and Treatment of Pernicious Anæmia, Brit. Med. Jour., vol. i., 1891.

II.—PRESENT OBSERVATIONS.

Object.—The problem which this disease has since presented to me has been mainly one as to the nature and source of the infection pointed to in the foregoing work, and this is the subject of the further observations which I have now to record. The particular kind of problem was not one that lent itself to solution by direct studies (pathological, experimental, and clinical) such as had availed me in former work. To attack it directly bacteriologically implied (1) an elaborate investigation of the fauna and flora of the whole digestive tract in cases of pernicious anæmia; (2) for purposes of comparison similar investigations into other gastro-intestinal conditions; (3) experimental investigation of the virulence of these various organisms—and that, too, not only individually, but in the various possible combinations ("mixed infections") such as occur within the digestive tract; and lastly (4), presuming all these investigations to be successfully carried out, there was the certainty that at the very best the results could only be suggestive, not conclusive, since it was quite out of the question to reproduce by experiment the more or less unhealthy conditions of the digestive tract, extending probably over many years, which according to the foregoing observations preceded, and were probably necessary to, ultimate successful infection. Great as my interest in the disease was, such a fruitless task I did not care to enter upon. I have therefore had to content myself with observations on individual cases as they have presented themselves, observations mostly of a clinical character, supplemented, however, by such pathological observations as were possible. The disease is not common, and cases under individual observation are necessarily few and far between. Moreover, for the particular purpose which I have had in view they are even fewer than usual, for the cases most suitable have been those met with in private practice as distinguished from those met with in hospital practice. For it is in the former rather than in the latter that the precise conditions as to previous health, food, occupation, and general sanitary surroundings can be definitely ascertained and that any deviation from the normal can be ascertained and appraised at its proper value.

It was clear to me from my previous studies that some such minute inquiry into individual cases was called for, and that in this way rather than by any process of collective investigation light might be thrown on the mode of origin of the disease; for one of its peculiarities is that it is met with alike in the rich and in the poor, in the well-fed as well as in the poorly nourished, in the athletic as well as in the weakly, in the man whose whole life has been spent in the open air of the country as much as in those living in the less pure atmosphere of towns, and in those persons who were previously healthy as much as in those who were already the subject of disease. These facts appeared to me clearly to indicate that it was not general conditions of life that were at fault or that could be held responsible for the disease, but that its origin was rather to be sought for in some special conditions—rare fortunately in incidence, but common to all classes irrespective of station, mode of life, food, and general surroundings.

Nature of results.—The present observations are based on a series of seven cases of pernicious anæmia observed in private practice. The result of them may be briefly stated. It has been to draw attention to the following points: (1) The frequency with which an unusually cario-necrotic condition of the teeth is met with in pernicious anæmia as an antecedent to the onset of the anæmia; (2) the frequency of the conditions of glossitis and stomatitis among the first objective signs of the disease, sometimes as the first subjective and objective trouble; (3) the frequency of gastric symptoms (sickness, retching, vomiting) pointing to gastric trouble; (4) gastric catarrh of an infective nature in pernicious anæmia; (5) the origin of infective gastric catarrh from necrotic and suppurating teeth; and (6) the conclusion that in pernicious anæmia the original infection underlying the disease is in most cases to be traced to the teeth, and possibly, in a few cases, to exposure to drain poisons.

Conclusions.—The conclusions I have thus come to are:

1. Pernicious anæmia is a special form of chronic blood poisoning—a toxæmia. 2. It is the result of a special infection of the digestive tract, especially of the mouth and stomach and probably, although to a less degree, of the intestine. 3. The chief source of the infection is through the mouth, from long-continued and neglected cario-necrotic conditions of teeth and sometimes possibly from stomatitis arising from other causes. 4. The usual effect of this infection is a chronic infective catarrh of the mouth and stomach which may in time lead to deeper seated changes, e.g., ulcers of the mouth and tongue, chronic glossitis and atrophic changes in the tongue, and chronic gastritis with atrophy of gastric glands. 5. Evidences of the infectivity of the organisms of dental decay are overwhelming, and in suitable cases the infective nature of the resulting catarrh of stomach can also be demonstrated. 6. The infection is chiefly streptococcal and probably derives its special characters from being of a "mixed" character. 7. Such infection the more readily occurs if the stomach or intestine is already from any cause the seat of disease. 8. The gastric and intestinal irritation (sickness, retching, vomiting, looseness of bowels, and diarrhœa) so often noticed, and which I find to be even more common than is stated (being recorded in close on 80 per cent. of cases) is the local effect of this infective catarrh, while the excessive destruction of blood taking place in the portal area is the result of the action of the poisons in the blood. 9. The fever so commonly met with is not an accidental occurrence, the effect of weakness, but is a feature of the disease, a result of the infective process itself, and its variations correspond to variations in the activity of that process. 10. Such variations are common—from week to week, sometimes from day to day, in the progress of the disease, even when it is running a fairly progressive course. 11. In addition, however, the course of the disease towards the fatal termination is often marked by one—sometimes by two—periods of marked improvement, lasting, it may be, many months or a year or more, followed by relapses. This character of the disease I have come to regard as the result of a relative immunity, unfortunately only temporary in its nature, conferred by the disease itself—an immunity accelerated and greatly strengthened for a time by suitable medicinal treatment, notably by administration of arsenic. 12. The above conclusions suggest certain new considerations in regard to treatment, of which the chief are: (*a*) minute attention to the hygiene of the mouth and especially of the teeth, with the immediate removal of every source of infection there; (*b*) stricter antiseptic treatment of the stomach and intestine; and (*c*) antitoxic serum treatment with the view of antagonising within the blood itself the poisons absorbed into it.

III.—DENTAL, ORAL, AND GASTRIC CONDITIONS IN SEVEN CASES OF PERNICIOUS ANÆMIA.

That a disease so rare as pernicious anæmia should prove to be a chronic infective disease, still more that it should appear to have any connexion with a condition so common as cario-necrosis of the teeth, may well excite surprise. For the former conclusion my former observations had already prepared me, but for the latter I was quite unprepared, and its gradual development in my mind—for it has been very slow and gradual—may be best traced by giving a brief summary of the cases in the order in which they occurred. The fuller details will be reserved for the end of this paper.

CASE 1 (1888).—This was a case of pernicious anæmia in a man of 59 years of age. There was a history of "gastritis" six years previously. The origin of the illness was referred to a definite exposure to bad drains three years before, causing at the time sore-throat and diarrhœa, and followed by a constantly recurring inflamed condition of the throat and tongue and by increasing debility. The teeth were loose and the gums spongy. There were tender, inflamed sores under the tongue and chronic glossitis. Retching and vomiting were present in earlier stages of the illness, but in later stages they were absent. The blood showed 950,000 of red corpuscles, or 19 per cent., per cubic millimetre, and hæmoglobin 20 per cent. There were well-marked toxæmic attacks, marked by fever, sweatings, looseness of bowels, and intense urobilinuria. The post-mortem examination detected chronic and subacute gastritis of three years' duration, and typical pigment changes in the liver and kidneys. It was this case that first drew my attention to the mouth as a possible source of infection. The condition of the teeth and the gums I noted as a part of my routine examination, but it made no special impression on my mind. If I thought of it at all I put it down to weakness.

CASE 2 (1894).—The patient was a man, aged 42 years, with a history of growing pallor for four years. The origin of his illness was referred by himself to a change of tooth-plate. He had a new set of upper teeth fixed in a gold plate, which tarnished and tasted "like pennies" and caused "acidity" from the first day he used them. Then followed progressive weakness, vomiting of food, nervous disturbances, numbness and tingling in hands and feet, loss of knee-jerks, wasting of certain muscles, a toxæmic attack marked by delirium, constant vomiting, and general œdema. Under corrosive sublimate there was a rapid recovery in three months' time, and the patient remained well for two years. Then came a relapse, with sickness and biliousness, fever, and looseness of the bowels. The blood showed 1,800,000, or 36 per cent., of red corpuscles per cubic millimetre, and hæmoglobin 38 per cent. This case, striking as it was, failed to excite any special attention to the mouth or the teeth. I have no note of the condition of either. The absence of any note about the tongue may be taken as indicating that nothing special was observed in its condition. As regards, however, the previous condition of the teeth, the fact that already at the age of 38 years (four years before) he required a new set of false teeth for the upper jaw speaks more eloquently, perhaps, than words could do.

CASE 3 (1895).—This was a case of pernicious anæmia. The patient was a man, aged 50 years, whose previous health had been good. The origin of his illness dated from "influenza" two years before (in 1893), followed by another attack a year later (in 1894), and then by loss of appetite for both food and drink. After 1893 he constantly complained of a faint, weak feeling in the stomach. There was temporary improvement from December, 1894, to May, 1895. Between October, 1894, and May, 1895, the tongue was raw and tender "like raw liver," causing him intense pain. There were also toxæmic attacks and acute relapses of fever with disturbances of liver, also sickness and vomiting and gastric pain. The blood showed 1,860,000, or 37 per cent., red corpuscles per cubic millimetre and hæmoglobin 54 per cent. The duration of the illness was about two and a half years. No note as to the condition of the teeth had been taken when I saw him. I subsequently learned that he had bad teeth, with occasional neuralgia—seldom toothache. Latterly he would discover that a tooth was loose and could be drawn out without the slightest force or trouble.

CASE 4 (1896).—The patient, aged 56 years, suffered from pernicious anæmia. He was a country gentleman and was active and athletic. There was a history of increasing weakness, with intermittent periods of betterment, for two and a half years; specially marked for the previous three months. The tongue was soft, clean, moist, and not indented. The teeth were very bad, black, and decayed in both fangs and crowns. The stomach was dilated, with splashings and flatulence. There was no sickness, but uneasiness and discomfort. The patient had diarrhœa five or six times daily, with very offensive stools. There were nervous symptoms, numbness, tingling, loss of knee-jerks, and ataxia. The illness ended fatally. The blood showed 760,000, or 15 per cent., red corpuscles per cubic millimetre, and hæmoglobin 18 per cent. The duration of the illness was two and a half years.

It was this case that first directed my attention to the teeth. The case was a typical one in its mode of origin, showing steadily increasing weakness in a man previously strong and athletic, living a country open-air life, surrounded by every comfort, without exposure to any source of drain or sewer poisoning. What chiefly directed my attention to the teeth in this case was not, perhaps, so much that they were bad—although a blacker and worse mouthful of teeth I have seldom seen—as wonder that anyone in this patient's station of life and with his comforts and surroundings should have allowed his teeth to get into such a condition. Apart from the blood changes and their effects, which were very marked, the condition of the teeth was practically the only objective sign of disease that he presented. I could not believe that they could be the result of the disease; and the question arose in my mind, for the first time, whether they could have had anything to do with causing the disease. Locally, in the mouth, there was no obvious sign of disease, and except for a dilatation of the stomach with an ill-defined sense of discomfort there was nothing special

to point to disorder of the stomach. The only symptom of disorder of the digestive tract was the diarrhœa, which was marked by particularly offensive stools. My suspicions might prove to be quite groundless, but I resolved henceforth to note the condition of the teeth in all cases coming under my notice.

CASE 5 (1896).—This was a case of pernicious anæmia. The patient was a clergyman, aged 51 years, whose previous health had been good, for he had never had any illness till the present time. Its origin was undefined. There was no history of drain poisoning, but there had been increasing weakness for 12 months, especially the last four months. There was no history of indigestion, sickness, or vomiting, and the freedom from these symptoms continued; at most there was slight flatulence. The tongue was clean, but not specially smooth, and with nothing abnormal. Of the teeth, two or three were exceedingly bad, three being black rotten stumps in the lower jaw. There was no diarrhœa. Urobilinuria was present. The patient made a temporary recovery, but a relapse followed by death ensued. The blood showed 1,230,000, or 24 per cent., red corpuscles per cubic millimetre and hæmoglobin 40 per cent. The duration of the illness was two and three-quarter years. This case, coming as it did within a fortnight of the previous one, served further to direct my attention to the teeth, for here also the teeth were the only diseased part of the organism apart from the blood changes and their effects. There was no local trouble in the mouth, but the teeth were so bad that I remember stating that if the patient were not so weak I should like to have them all removed at once.

CASE 6 (1898).—This was a case of pernicious anæmia in a man who had a history of indigestion and poor appetite and was aged 52 years. The patient had been ill with anæmia six months before (in 1897) without sickness, but with irregularity of bowels, diarrhœa at times, and slight fever. The tongue was clean but flabby. The teeth were very bad and covered with tartar and sordes. Three upper molars were gone, but the roots were left, and one of them was loose and could be pulled out with the finger. The breath was very bad, the digestion was very feeble, and the bowels were irregularly loose. Towards the end of the illness there was gastric pain on eating. The case ended fatally. The blood showed 1,390,000, or 27 per cent., red corpuscles per cubic millimetre, and hæmoglobin 34 per cent. The duration of the illness was (?) nine months. In this case there was a history of chronic indigestion, very bad teeth, very feeble digestion, and later gastric pain and irregular looseness of bowels.

The next case of interest to me in this relation that I met with was not one of pernicious anæmia but of subacute gastritis, caused and kept up by three suppurating teeth and permanently cured by removal of these teeth.

CASE 7 (1898).—This was a case of subacute gastritis in a woman aged 62 years. The patient suffered from severe intermittent sickness and gastric pain, necessitating the use of morphia; lasting eight months, with loss of weight and increasing weakness. Cancer was suspected, but on examination no sign of malignant disease was visible in the stomach, the abdomen, the rectum, or the uterus. Constant complaint was made of a bitter taste in the mouth, nausea, and loathing and distaste for all food. The tongue was coated with a dirty moist fur. The patient had false teeth both in the upper and the lower jaws. The plates were scrupulously clean and the gums beneath the plates were perfectly healthy. There were only three teeth in the jaws, and these were decayed, there being suppuration around the roots with pus welling up on pressure. There was no other sign of disease. A provisional diagnosis was made of gastritis caused by continual swallowing of pus. The stumps were ordered to be removed. A week later the tongue was clean, the sense of taste returned for the first time for eight months, and there had been only one attack of gastric pain. In another week there was a return of the sickness, with vomiting and pain and slight fever. The vomit obtained was free from food; it was watery, with rusty flakes consisting of mucus, fibrin, catarrhal cells, leucocytes, and blood, the whole being loaded with streptococcus and staphylococcus (pus) organisms and a few bacilli. A diagnosis was made of infective gastric catarrh. As a local antiseptic three grains of salicylic acid were given thrice daily and peptonised milk was also given and counter-irritation was applied. There was complete cessation of all pain and a steady recovery from that time onward. When the patient was first seen her weight was 9 st. 10 lb., and a month later (after her illness) it was 9 st. 6 lb. Two months later it had increased to 10 st. 6 lb. She reported herself well and she has since remained well (after 15 months).

Up to this time my suspicions regarding the teeth were based on general grounds. Knowing as I did how infective the organisms of dental caries were, such unhealthy teeth seemed to me to be *possible* sources of infection. I had had no proof that infection from decayed suppurating teeth might be the direct cause of gastritis, nor did I know of any observations showing this. This case was a particularly crucial one in this relation. Had the teeth as a whole been very bad—e.g., a number of rotten stumps interspersed with fairly good teeth, the condition one so often meets with both in private and still more in hospital practice—and had I had them all removed and replaced with good artificial teeth, I could not have been sure that the resulting improvement was due to removal of the teeth as sources of infection and not rather to improved appetite and better mastication. As it was as regards new teeth no change was made, or, indeed, was necessary. The only change made was the removal of the three suppurating teeth, which had, the patient said, never caused her any trouble and which indeed she regarded as "old friends" whose loss she greatly deplored. She said that "she had had them like that for 12 months or more"—her gastric trouble be it noted extending over about the same period of time. I was able to demonstrate further in this case the infective nature of the gastric catarrh, the fluid vomited being loaded with pus organisms, three weeks after removal of the suppurating teeth.

CASE 8 (1899).—This was a case of pernicious anæmia. The patient was a man, aged 53 years, whose health up to June, 1898, had been good. There was a definite history of exposure for a period of some weeks to sewer-gas. He suffered from retching, vomiting, and pain after food with intense salivation and gastrorrhœa. The upper teeth were all absent except one in front which was dark, decayed, and loose in its socket. Several molars and bicuspids were absent from the lower jaw. He had worn tooth-plates for the previous two years. At the commencement of illness there were painful sores in the mouth under the tongue, which soreness, as he said, "seemed to spread down into the stomach and right through him." The blood showed 1,290,000, or 25 per cent., red corpuscles per cubic millimetre, and hæmoglobin 24 per cent. The vomited fluid was watery, with flakes of mucus and catarrhal cells, the whole being loaded with small cocci, often in zoogloea-like masses. There were also bacilli and larger cocci but in fewer numbers. A rapid temporary improvement was made under salicylic acid, but this was followed by a relapse marked by salivation, stomatitis, occasional diarrhœa, progressive weakness, œdema, acute epididymo-orchitis, and ultimately by death. The duration of the illness was one and a half years.

This case, coming so shortly after the observations made in Case 7, I regard as one of the most instructive which I have met with, in respect not only of the history of its origin but also of its oral and gastric symptoms. The illness dated from a definite exposure, lasting for a period of some weeks, to the odours of a cesspool close to the window where he worked, the smells from which were so bad that they often made him sick. Among the first troubles he noticed were sores in the mouth; and his own description of his disease was that this soreness seemed to extend right through him from the mouth to the anus. Then followed retching and salivation to a degree such as I had never before witnessed, pints of fluid daily being brought up either directly from the mouth, or indirectly by vomiting from the stomach. There was a history of dental trouble, all the teeth in the upper jaw being absent with the exception of one which was markedly rotten and loose. This, however, he valued despite its looseness and would not allow it to be removed. Lastly, there was the microscopic observation made on the vomited fluid which demonstrated the presence of masses of cocci. The relation of events in his illness seemed thus to be in my mind: 1. Previous dental trouble, extending probably over many years (he had worn tooth-plates for two years, but still retained necrosed teeth). 2. A definite exposure to sewer-gas infection which, either alone or in combination with preceding infection from the teeth, set up both local infective trouble in the mouth (sores under the tongue with salivation and stomatitis) and gastro-intestinal trouble (gastric infective catarrh with retching,

vomiting, and pain). 3. The rapid onset of anæmia. Three months later the patient became so anæmic that he could not work and there was so much gastric trouble that cancer was suspected. 4. The subsequent history of the case—that of pernicious anæmia.

(To be concluded.)

EXCISION OF THE SPLEEN FOR INJURY.

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ON Jan. 6th, 1899, a man was brought into the outdoor department of the Barisal Hospital, Bengal, by the police, whose report was to the effect that a quarrel had arisen between the patient and a neighbour, in the course of which they came to blows and the latter struck the former with a sharp-edged weapon (a *dao*) so as to wound him in the "stomach." My assistant surgeon (Babu Radha Nath Bose) on examining the patient at the time found that he had received a severe abdominal wound from which there was a dark congested-looking mass protruding, that considerable hæmorrhage had occurred, and that the patient's clothing had been stained, not only with blood, but also with mud, as though he had been working in the fields at the time when he received the injury. The patient was a well-built man, aged 45 years, by caste a Mahomedan, by occupation a cultivator, resident in the village of Nazirpur (police-station Gournadi). The symptoms of shock were well marked, for the man's face was pale, his lips were blanched and his hands and feet were cold; but he retained consciousness, there was no nausea or vomiting and there was no marked muscular relaxation. The pulse was comparatively feeble, but the heart-sounds were distinctly audible and apparently not much altered from the normal. On the left side of the abdomen, in the hypochondriac region and in the angle formed by the costal cartilage of the tenth rib and the left linea semilunaris, there was an incised wound, two and a half inches in length and three-quarters of an inch in width, and penetrating the whole thickness of the abdominal wall. The direction of the wound was from above downwards and slightly outwards so that the upper end, also somewhat wider, approximated more towards the middle line than did the lower end. Protruding outwards between the lips of the wound was a dark congested mass, a portion of the spleen. The lips of the wound had contracted tightly round the base of the projecting portion so as to prevent the return of venous blood. Moreover the capsule of the organ was incised to the extent of one and a half inches and the splenic pulp was bulging through this opening. Considering, then, the circumstances of the case, the fact that the injury had been inflicted some little time previously, and taking into account that the patient had been brought a considerable distance and that his wound had been exposed to septic influences, such, for instance, as contact with dirty clothing, I feared the effects of septic processes more than those of shock or hæmorrhage or other conditions. Thus I decided that it would be unwise to return to the abdominal cavity a portion of viscus which had been exposed so long and under such circumstances, especially as it seemed to me just possible that the peritoneal cavity might as yet be free from infection since the tight sphincter arrangement of the wound prevented the inflow of any fluid from the external surface. Of course there was the chance that the weapon which inflicted the injury had also carried septic infection into the peritoneal cavity, but even though such were the case it did not seem prudent to add to the dangers by wilfully returning a piece of septic spleen whose vitality was already lowered and whose substance would favour the growth of septic organisms in the patient's present condition. Yet at the same time I was unable to satisfy myself that the muscular contraction at the seat of injury had been so complete as to have excluded all chance of infective material having passed from the wounded surface of the organ to the portion still within the abdomen. The possibility of such a spread impressed itself the more upon me when I considered the dorsal decubitus of the patient and the consequent action of gravity. Under the circumstances, therefore, I looked upon the entire spleen as an infected organ, and I satisfied myself that its complete removal would minimise the risks of the patient.

Operation.—My first step was to administer to the patient half-drachm doses of compound spirit of ether and aromatic spirit of ammonia by way of stimulant. I had no fear of hæmorrhage at present, as the capillaries on the wounded surface of the abdominal wall had long ere this ceased to bleed, whereas the hæmorrhage from the injured organ and its capsule were held in control by the muscular edges of the wound. My next care was to wash the wound and the surrounding parts with the greatest precautions, and for this purpose I used by preference a solution of carbolic acid in the first instance of the strength of one part of the acid in 50 of water. This antiseptic substance penetrates more deeply into the tissues and thus finds its way into crevices far more readily than does the perchloride of mercury. Next, taking a long strip of lint about two inches wide and wringing it out of the antiseptic solution, I sprinkled it over with a mixture of equal parts of iodoform and boric acid and packed it round the base of the protruding tongue of spleen so as to prevent the ingress of any fluid into the peritoneal cavity. At this stage chloroform was administered and when the patient was thoroughly under the influence of the anæsthetic I secured the protruding mass by means of an ordinary hæmorrhoidal clamp such as that devised by Smith. This served a double purpose, for it acted as a ligature, preventing the inflow of any blood from this part of the organ and it also kept the projecting portion from slipping in when I took the next step in the operation. This consisted in extending the abdominal wound downwards for a convenient distance; in the present case one inch sufficed. In doing this, however, I adopted the plan of cutting at first through skin, fasciæ, and muscular layers only, then arresting the hæmorrhage completely, and finally extending the peritoneal opening. The spleen was quite isolated and its attachments, especially the gastro-splenic omentum, were lax, and this allowed of my lifting the whole organ out and bringing the pedicle to the surface-level. I carefully avoided either pressing upon or pulling the spleen more than was absolutely necessary, so that I ran no risk of either squeezing infected material inwards or of rupturing the vessels at the hilum. I next proceeded to ligature the pedicle and for this purpose I used stout chromicised carbolised catgut, believing that the chromicised material does not so readily absorb septic matter as ordinary catgut or silk, which latter is also apt to become too loose as the enclosed portions contract. I applied double ligatures and before removing the parts external to the outer ligature I passed two sharp-pointed probes through the substance of the pedicle between the two ligatures. The probes were at right angles to one another; their sharp points were protected by means of two pieces of cork, their ends rested upon the surface of the abdomen, and their function was to support the stump which would remain after removal of the main body of the organ. Having done this I cut away the entire spleen external to the outer ligature. The remaining stump I treated exactly like the stump of the uterus in a Porro's operation—that is, at the wound which I closed round it. The wound was then dressed in the ordinary way with perchloride of iron. During the whole operation the greatest care was taken to prevent any fluid from passing into the peritoneal cavity; no appliance was introduced into that cavity, and by protecting the abdominal opening with a piece of gauze wrung out of carbolic lotion any air that passed into the peritoneal cavity was, as it were, filtered through an antiseptic medium. The spleen weighed 12½ ounces, and measured six inches in length, four and a half inches in breadth, and one and a half inches in thickness. In colour the organ was dark. It had, moreover, a slight constriction round the part that had been held by the abdominal wound.

After-treatment.—The patient was kept at absolute rest and for the first 48 hours was fed entirely on milk. Pills containing each a quarter of a grain of the extract of opium and the same quantity of the extract of belladonna were administered at intervals in order to keep the patient at perfect rest and, by producing an artificial constipation, to avoid all straining efforts. At the end of 48 hours I dressed the wound with very great antiseptic precautions, the process being repeated every second day thereafter. On the eighth day after the operation (Jan 14th) the healing process had advanced so far as to allow of the removal of the probes, and a fortnight after the operation (Jan. 20th) the wound had completely healed up. On the following day I permitted the patient to be removed to the Barisal jail as a warrant had been issued for his

arrest. I continued, however, to keep the man under observation in the jail hospital, and after an interval of some days I transferred him to the "convalescent gang," where he was kept on special diet and being an "under trial" prisoner he had no work to do. On Feb. 3rd he was able to appear for trial in court. During the whole period of convalescence the patient's temperature never rose more than one degree above the normal, his pulse gradually returned to a healthy condition, and his appetite remained good. The recovery made by the patient was remarkably speedy, and the last report I had of him was in a letter dated Nov. 16th, 1899, which stated that he was in good health and able to attend to his ordinary occupation as in former times.

I may add that no vomiting occurred either during or after the operation and that no hæmorrhage or other complication took place during the period of recovery. An examination of the patient's blood made after the operation revealed no very marked condition, but having had no occasion to make such an investigation before the removal of the spleen I am unable to make any comparative statements. From the somewhat complicated physiological functions which the spleen discharges during health as a member of the hæmopoietic system, we should be led to expect important changes in that system, and especially in the blood, after total removal of the organ in question. Such changes have from time to time been observed. Thus, considering that the chief functions which the spleen discharges in the physiology of the human system are concerned with the production of white blood-corpuscles, the breaking down of the red blood-corpuscles (hæmolysis), and the metabolism of proteid substances, the breaking down of hæmoglobin—the change we should most of all look for after removal of such a body is an alteration in the relative proportion between white and red corpuscles in the blood. This has been noticed by several observers. Moreover, it frequently happens that the lymphatic glands take on a condition of hypertrophy to compensate, as it were, for the loss of the spleen. These lymphatic glands being engaged in the production of the white corpuscles of the blood, their tendency is to increase in size and in activity and to correct the alterations in the blood often to the extent of making them inappreciable. Among others Czerny and Kocher have noticed enlargement of the lymphatic glands under such conditions. In the case that was under my care a close search revealed a single superficial lymphatic gland belonging to the femoral group on the left side swollen to the size of a small bean. It was situated a little below and to the inner side of the saphenous opening; slight pressure applied to the long saphenous vein over the lower margin of that opening in the fascia lata was sufficient to make the vessel stand out external to the swollen gland. Besides, the swelling could not be traced to any other cause; it was not present at the time of the operation, but appeared on the third day after, and it gradually disappeared in the course of a week without the aid of any external application.

The operation of extirpation of the spleen, or splenectomy as it is called, has been performed for many causes and with a varied degree of success. Leucocythæmia, chronic congestion of the spleen, albuminoid degeneration, syphilitic enlargement, simple and malarial hypertrophy of the organ, floating spleen, hydatid disease, cystic spleen, sarcoma, abscess, rupture, and wounds constitute the list of conditions for which the operation has been attempted. In leucocythæmia, chronic congestion, albuminoid degeneration, and syphilitic enlargement the results obtained from this operation have shown so high a mortality as to render this mode of treatment unjustifiable under the circumstances. In cases of simple and malarial enlargement and of floating spleen the results have been considerably better. Vulpius of Heidelberg in the tables of cases he has collected quotes two instances of ruptured spleen both of which ended fatally. The operation is to be considered as one which is exceedingly severe, which should only be undertaken when the surgeon is perfectly satisfied that it is the course of treatment which of all others under the prevailing circumstances is calculated to diminish the risks to be borne by the patient, and when the operator is quite certain regarding the efficacy of his antiseptic arrangements. Besides the dangers common to all forms of laparotomy, especially infection of the peritoneum and its results, the great fear in this particular operation is that of hæmorrhage from the vessels at the hilum of the spleen; in the case which I have described the risks of such an accident were minimised to a great extent by the mode of procedure which I adopted.

Edinburgh.

THE PATHOLOGY AND TREATMENT OF APPENDICITIS.[1]

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IN the discussion which took place recently before the Medical Society of London on the Prognosis of Appendicitis[2] and which was introduced by Dr. H. A. Caley this observer and some of those who spoke made use of clinical statistics to a large extent. This method of inquiry is obviously of value, but it has not hitherto carried conviction to the minds of physicians and surgeons. The reason for this is simple. Taking the 99 cases of simple appendicitis and perityphlitis, on which Dr. Caley's remarks had been based, in which the patients were said to have recovered it is reasonable to ask how this is known to be true. A certain proportion of them must have had concretions in the appendix. The attack may have subsided, but the patients had not recovered and the appendicitis was sure to recur. It would be just as reasonable to say that a patient with stone in the bladder had recovered because after rest in bed an attack of cystitis had subsided. Without doubt some of the 99 cases relapsed and the patients went to other hospitals and were there included amongst the severe cases with perforation, gangrene, or septic peritonitis. I venture to think that appendicitis cannot be correctly prognosed until it is possible to infer from the clinical symptoms the pathological changes proceeding within the appendix. I do not intend to discuss the nomenclature of diseases of the vermiform appendix: much confusion prevails and the classification adopted by many authors is illogical. When inflammation originates in the vermiform appendix I intend to call it appendicitis and to add terms to indicate the effects which the disease has produced, such as ulceration, perforation, gangrene, the various inflammations of the peritoneum, of the broad ligament of the uterus, of the portal vein, and so forth. The remarks which follow are based upon the histological examination of 53 cases of appendicitis ranging from the slightest to the most acute. The specimens have been obtained from cases which I myself had operated upon and of which I know the histories

The first group of cases is that in which suppuration was absent. Some of these cases come under the head of "appendicular colic." In these so far as is known no clear attack of appendicitis has ever occurred. They were characterised by slight tenderness on pressure over some part of the iliac fossa, by disorders of digestion, and by occasional attacks of transient pain not infrequently mistaken for renal colic.

[Regarding the normal anatomy of the appendix Mr. Lockwood directed special attention to the lymphoid follicles and the lymphatic system of the appendix. The continuity of the sub-mucous and sub-peritoneal tissues through numerous gaps (hiatus muscularis) in the muscular coats was pointed out and the paths by which inflammatory and infective inflammations of the mucosa spread to the peritoneum were demonstrated by lantern-slides.]

In a case of appendicular colic, such as was described by Talamon, a healthy young woman suffered for 18 months from abdominal pains. During the last six months she had been unable to follow her occupation. The pain was referred to the right side of the abdomen and to the right iliac fossa. It had been diagnosed as being caused by colic. The appendix was removed. To the naked eye it appeared normal. Microscopical section, however, showed the lumen to be filled with epithelium, mucus, granules, and crystalline bodies, and crowded with diplococci, small ovoid bacilli single and in pairs, small clumps of staphylococci and streptococci in chains from four to six, and some long slender bacilli. In the micro-photograph the mucosa of the appendix is seen to be ulcerated, and these various bacteria

[1] An abstract of a paper read in introducing a discussion before the Medical Society of London on Jan. 22nd, 1900.

[2] THE LANCET, Dec. 2nd, 1899, p. 1512.

have penetrated for perhaps half a millimetre into its substance. We might be reluctant to advise the removal of the appendix for a disease designated "appendicular colic." Such a designation conveys but little idea of danger. But few would hesitate to remove an appendix the mucosa of which was ulcerated and invaded by bacteria.

Amongst the cases which have been included under the term "catarrhal appendicitis" until the result of the histological examination has been ascertained the following has been considered a typical case. A young man, aged 29 years, had his first attack of appendicitis at the age of 19 years. During the next 10 years he had so many attacks that he could not recall their number. They usually confined him to bed for a day or two and prevented him from going to business. Perhaps an operation had been deferred because he suffered from mitral disease. The appendix was removed in the usual way and was not adherent. It was engorged with blood and felt very hard. It was constricted about three-quarters of an inch from the intestinal end. The micro-photograph shows the mucosa to be ulcerated and the lumen to be filled with granules, crystalline bodies, shreds of organic matter, irregular pieces of semi-transparent substance, and quantities of bacteria. These include many morphological varieties, cocci, diplococci, short ovoid bacilli single and in pairs long slender bacilli, short thick bacilli with rounded ends, long thick bacilli, leptothrix, spores, and spore-bearing bacilli. Many of the tubular glands had shed their epithelium which had been replaced by plugs of bacteria projecting from the lumen. In some places these bacteria were penetrating the lymph canalicular system of the mucosa. The term "catarrhal appendicitis" does not perhaps convey to the mind a very clear sense of impending danger, but no one who is aware of the pathological state of such an appendix as this would hesitate for a minute in advising its removal.

Of the other pathological conditions associated with clinical signs of appendicitis I will take the effects of stenosis first. The appendix of a young woman who had had four attacks of appendicitis was removed. During the attacks the temperature rose. She had pain in the right iliac fossa, which was so severe as to cause collapse, there was constipation but no vomiting. Betwixt the last two attacks pressure in the iliac fossa was painful so that it was obvious that although appendicitis had subsided it had not got well. The appendix was not adherent, was nearly four inches long and constricted from the cæcum. A micro-photograph of the constricted part shows the mucosa beyond the constriction to possess an epithelial lining. The lumen contains pus full of streptococci. It is hardly necessary to point out the danger of this condition, but to render it clearer micro-photographs of another case were referred to. A man had had six attacks of appendicitis and was advised to have his appendix removed. The operation was deferred until after his wife had been confined. When next seen he had no signs whatever of appendicitis but was obviously suffering from hepatic abscess. An attempt was made to discover this abscess from behind but without success. A second attempt was made in front. No abscess could be discovered, but inflamed glands were felt about the cæcum. The appendix was therefore removed. The micro-photograph showed that the interior contains pus full of streptococci with a few bacteria of other types. The lymph on the surface of the appendix was also full of streptococci. The patient survived this operation, but ultimately he died from portal pyæmia with a number of abscesses in the liver. The delay in this case is evidently a matter for the keenest regret, and it would never have been permitted had the pathological condition of the appendix been accurately diagnosed.

[Some of the effects of ulceration of the mucosa and subsequent infection of the appendicular wall were next illustrated by Mr. Lockwood. Also the dangers of fæcal concretion. Fæcal concretions were shown to be bacterial masses, a point which, strangely enough, had not been demonstrated by any investigator. He then continued:—]

I regret that I have not time to demonstrate by specimens the various steps in the formation of fæcal concretion. These specimens show that fæcal concretions are always associated with general ulceration of the mucosa; that the concretion was not necessarily the cause of the ulceration; and that the concretion and the ulceration both owed their origin to the same cause, bacterial accumulation within the appendix. The presence of concretion in the appendix is evidence of extensive ulceration of the mucosa and bacterial invasion. A large concretion is in itself a mechanical peril when, owing to the application of cold to the surface of the body, the appendix becomes engorged. It may cause a perforation of the appendix in its vicinity or gangrene of the part beyond. If it be true that many of the cases of appendicitis which are said to have recovered as a matter of fact contain concretions it is easy to imagine their peril.

Of the so-called process of natural cure the accounts given by authors are fanciful. It is impossible to say when the so-called process of natural cure has been achieved. The appendix had been removed from a man who had had at least 20 attacks of appendicitis. He had twice been in large London hospitals, once under a surgeon and once under a physician. As they sent him out again without operation it is reasonable to suppose that they anticipated that the natural process of cure would eventually take place. The appendix was removed. A histological examination showed that the mucosa had been destroyed by ulceration and that the lumen was occupied by a concretion which seemed calculated to prevent any supposititious natural cure from taking place. An appendix which has once been inflamed may inflame again after long intervals. An appendix was recently removed for repeated and violent attacks of appendicitis which had recurred after a period of quiescence of nine years. In another case the patient had a violent attack of appendicitis, then an interval of 15 years of quiescence followed by another violent attack, after which the appendix was removed. It does not seem reasonable to lay down rules as to how many attacks should be suffered before the appendix is removed. I am inclined to wait for some time after the first attack of non-suppurative appendicitis to see what supervenes. But on several occasions the appendix has been removed after the first attack because it was still painful and could be felt. Under the circumstances the general health of the patient is seldom good and the functions of the alimentary tract are improperly performed, indigestion, flatulence, constipation, and diarrhœa being frequent accompaniments. After a second attack of non-suppurative appendicitis most patients prefer to part with an organ which appears to be of no physiological importance and an actual source of danger.

As to the question of diagnosis, it is usually possible to say that the appendix is inflamed, but hitherto the histology of appendicitis has hardly been sufficiently investigated for anybody to surmise with accuracy the actual pathological state of the appendix. The usual sequence of events, as shown by the histological examination of the 53 specimens, is destruction of the epithelial lining of the lumen, ulceration of the mucosa, bacterial invasion of the mucosa and submucosa, and extension of the inflammation through the muscular gaps to the peritoneum. This process may be complicated by the formation of cicatricial strictures, by inflammatory obliteration of the whole lumen after removal of the mucosa, by the presence of fæcal concretions, by perforation, by gangrene, by inflammation of the appendicular lymphatics, and by portal pyæmia. It is also important to note that, as Clado was the first to point out, the inflammation in females not infrequently spreads along the lymphatics to the right broad ligament of the uterus, so that appendicitis is sometimes mistaken for inflammation of the ovary or Fallopian tube. In three cases of this kind operations have been performed. In addition it is important to observe that appendicitis sometimes occurs as a complication of other diseases. Primary tuberculosis of the appendix is probably a rare disease; although every specimen has been carefully examined for tubercle it has only once been discovered. But on one occasion in operating for the removal of an inflamed appendix general tuberculosis of the peritoneum was discovered, the inflammation of the appendix being a complication of that disease. In another case of appendicitis a hard mass was discovered at the base of the appendix. When a portion of this was submitted to histological examination it was found to be cancerous. The cancer, which involved the ileo-cæcal valve, was removed and the intestine was united by circular enterorraphy. The patient recovered but ultimately died from a recurrence of the cancer in the pelvis. As regards cases of appendicitis in which perforation or gangrene has occurred there can be little doubt as to the propriety of evacuating and draining the abscess as soon as diagnosis can be effected. The cases show that the safety of the patient depends mainly upon the stage at which the operation is performed and the position which the appendix occupies. When the appendix is beneath the cæcum and in the iliac fossa the chances of the abscess being localised are fair; likewise when the appendix lies to the outer side of the cæcum and colon.

But, in females especially, the appendix often hangs over the brim of the pelvis into Douglas's pouch; when such an appendix perforates or becomes gangrenous the danger is vastly increased. Moreover, collections of pus at the bottom of Douglas's pouch are most difficult to drain.

As regards the operation I advocate the oblique incision parallel to the outer half of Poupart's ligament because it can be extended to reach an appendix which lies outside the cæcum, or which is adherent within the pelvis. The wound seldom exceeds three inches in length; such a length as two inches or two and a half inches is very common. The layers of the abdominal wall are split and not cut across. In non-suppurative cases the appendix may be most difficult to discover. It may be laid down as an axiom that the organ is never absent except as the result of disease. Cases were mentioned in which the organ has only been discovered with the greatest difficulty because it was hidden away in either the subcæcal or the ileo-cæcal retro-peritoneal fossa. Doubtless surgeons who have failed to find the appendix have not infrequently been deceived by this abnormality. In cases complicated with suppuration and peritonitis a determined endeavour should be made to remove the appendix. It is worth while to run considerable risks rather than to leave behind an appendix which is profoundly septic and which may contain concretions. In some cases in which the abscess has merely been opened and drained and the appendix has been left behind subsequent attacks of appendicitis have been known to occur. In others a septic sinus has persisted requiring a formidable and often fatal operation for the removal of the appendix. In one such fatal case the sinus led to a perforated appendix which contained a large concretion. Nevertheless the patient's condition sometimes forbids an attempt to remove the appendix. A case of this kind was under observation in which the original appendicular abscess had been followed at intervals by three others of the most formidable and dangerous type. As regards the closure of the wounds after the removal of the appendix in cases without suppuration it has been found inadvisable to insert buried sutures of silk, because infection is likely to occur when the lumen of the appendix is cut across. Good results have been obtained with a single row or fishing-gut sutures.

Operations for the removal of the appendix vary greatly in their gravity. The simple operation is comparable to the radical cure of non-strangulated inguinal hernia. But occasionally after violent appendicitis the most formidable adhesions are met with and they may test all the courage and dexterity of the operator before they are overcome. In my own operations for the removal of the vermiform appendix in which suppuration is absent the patients recover more quickly since they lie upon their side and are quickly put on solid food. In cases of appendicitis with perforation or gangrene and acute abscess the after-treatment requires the greatest skill and watchfulness.

DEATHS UNDER CHLOROFORM.

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MANY of the readers of THE LANCET will have perused with much interest the remarks by Dr. Clayton Lane, Lieutenant I.M.S., on Deaths under Chloroform.[1] We must all agree with Dr. Clayton Lane that chloroform cannot be given with safety by any mere mechanical means, and that a man may be killed as effectively with chloroform out of a Krohne inhaler as out of any other inhaler that is capable of inducing anæsthesia. In fact, the best inhaler cannot supply the administrator with sense or with fingers. All that the inhaler can do is to become subservient truly and promptly to the highest order of professional intelligence. It can never read out for us the significance of the phenomena which occur in the progression of an anæsthesia, nor can it ever supply the administrator with skill or alertness.

Some comment upon Dr. Clayton Lane's letter has since appeared from Mr. C. H. Whiteford.[2] Unfortunately Mr. Whiteford does not state whether he still adheres to the rule-of-thumb method of administration or aims at scientific dosage. In the former case he offers us no basis for discussion. If the latter be Mr. Whiteford's aim, what we ask of him is to say whether he can show us any method of measured dosage other than the volumetric administration of air charged with chloroform vapour; and whether he can show us any apparatus by which precise and registrable dosage can be secured otherwise than by means of the improved Krohne inhaler.

To save wastage in chloroform, to save the operator's time, even to save the surgeons and nurses from being chloroformed almost as fast as the patient, are objects negligible in comparison with the conscientious fulfilment of the trust which is accepted by us when the patient submits himself to an anæsthesia. Under such a trust the administrator is bound by the most sacred ties of professional honour to see that his patient is anæsthetised with as much provision for a safe recovery as the administrator would wish for himself were he the patient. More than this cannot be asked for by the patient—less cannot be rendered by the administrator. There lie on my table newspaper reports of 83 inquests upon persons killed by anæsthetics in England in the year 1899. Of these, 68 were killed before the operation commenced. We know the inducements to have as few inquests as possible in such deaths, and we know also the inducements which lead to a suppression of the reports of such inquests. Reading between the lines it may fairly be estimated that these 83 inquests represent some 200 persons killed by anæsthetics in England during the year 1899. Can we, as a great and responsible profession, remain at rest in face of these facts? I think not. If that be so, in what direction are we to look for the remedy?

I submit that in the administration of chloroform what we must look for is the same precision of dosage as that which we ensure when we inject morphia or strychnia. Dispensers there are who could measure out a milligramme of strychnia on the end of a knife by means of the eye more closely than others could weigh it. The same is the case with 20 milligrammes of morphia. But we insist upon our hypodermic syringes being graduated, we insist upon our solutions being of a strength defined by the balance and the burette, and we do not allow pharmaceutical geniuses to play at "heads or tails" with the lives of our patients by guessing out strychnia on the end of a knife. That chloroform in vapour is a powerful poison is demonstrated by the above-mentioned deaths. Nevertheless, chloroform is, perhaps, the most beneficent of all drugs, and in order to be made safe it only needs to be administered with precision as to its dosage and not by rule-of-thumb methods, such as geniuses believe that they can safely practise. A true volumetric dosage of the vapour can now be obtained by means of the improved Krohne inhaler; it is therefore practicable always to administer anæsthetics with the same precision and security as we have long ensured for the administration of morphia or strychnia. Some of us remember the old school who used to scorn the clinical thermometer as a histrionic dodge, or as only good enough for those whose tactile sensibility was not sufficiently cultivated to recognise accurately the gradations of a patient's temperature. Yet now we all know that the clinical thermometer enables any nurse to define the patient's temperature at any moment to a tenth of a degree and that it is indispensable in clinical medicine. The same cast-iron pachydermatousness in our methods of administering anæsthetics now has to be vanquished if we are to make any true scientific progress towards bestowing upon our patients the blessings of a safe anæsthesia. Geniuses who have acquired the habit of slopping chloroform about by the ounce, and who only kill a patient now and then, will of course be disgusted at having to acquire methods of order and precision such as will ensure a comfortable and safe anæsthesia with one-tenth of the chloroform now used. The volumetric dosage of anæsthetic vapours will in fact be received in the same way as the stethoscope and the clinical thermometer were sometimes received. But the volumetric dosage of anæsthetic vapours will come to stay and there is only one instrument now before us by which it can be accomplished conveniently in clinical work. That instrument is the improved Krohne inhaler—used as I have described.[3]

The deaths with cyanosis, as described by Dr. Clayton Lane, are undoubtedly due to asphyxia, more or less pure. These deaths are caused by the inspiration of air surcharged

[1] Vide THE LANCET, Jan. 13th, 1900, p. 132.
[2] THE LANCET, Jan. 20th, 1900, p. 197.
[3] THE LANCET, Sept. 30th (p. 921) and Oct 28th, 1899 (p. 1205).

with chloroform vapour. Spasma glottidis, resistance, general rigidity or struggling, spasm of the respiratory muscles and diaphragm, together with spasm of the myocardium,—these are all provoked in various degrees, sequences, and combinations by the inspiration of surcharged air. The patients die from asphyxia more or less complicated by an angina which affects the heart much as cramp affects the calf of the leg. If the patients do not die suddenly as above and the chloroform be pushed there comes a paralytic relaxation of the glottis—as in drowning—and this is followed by further deep inspirations of surcharged air, just as, in some fatal cases of drowning, water and mud are drawn into the lungs. It is well known to practical men who have seen much of drowning cases that there are some cases brought to bank with the heart still beating and the chest movements still going, but which cannot be resuscitated, work as hard as we may at artificial respiration. They are these particular cases, and at the necropsy mud and water are found in the bronchial tubes. When got out of the water these cases can be distinguished by the fact that, though still breathing, foam issues from the mouth and nose. In my experience those cases are rarely resuscitated. Now in chloroform poisoning, after the paralytic relaxation of the glottis, the surcharged air re-enters the bronchi, surcharges afresh the pulmo-cardiac blood, and fills up the recesses of the air passages. Here the end organs of the whole system of respiratory nerves are poisoned by direct local soakage, while the surcharged pulmonary blood, passing on successively through the left chambers of the heart, poisons the myocardium and its local nerves in the same way. All this may be the work of half a minute in cases where chloroform is "pushed" after resistance has been provoked. If time had been given for the diffusion throughout the system of the chloroform ingested it would not even have produced anæsthesia. But it kills because it surcharges the local blood of the lungs and heart. It is not the total quantity ingested, it is the local surcharge—the concentrated action. A minim of oil of vitriol diffused through a wineglassful of water is drunk as a pleasant beverage—a minim of oil of vitriol dropped into the glottis is fatal. Then, as the lungs have had their air passages re-filled with surcharged air, the local poisoning goes on long after the inhaler has been removed, and the blood current through the chambers of the heart continues to be surcharged long enough to kill. Snow showed that 18 minims in the blood of an average man spell full surgical anæsthesia and that 32 minims spell death. But it is probable that four minims injected into the pulmonary vein would *kill* the heart nerves irretrievably. Powerfully absorbent must be the two successive chambers of the heart with all their complications of surface, in relation to blood which that organ has to receive from the lungs and to transmit under pressure to the general system. The experiment is one that could easily be tried at any slaughter-house or knacker's yard. What we want to know is what percentage of vapour-volume of chloroform serves to kill the animal heart beyond resuscitation. Waller has shown us that below 5 per cent. vapour-volume of chloroform in air arrests absolutely the function of a nerve, but not so as to prevent resuscitation. 6 per cent. *kills* the nerve. Now four minims of liquid chloroform may be regarded as four cubic inches of chloroform vapour. For a 6 per cent. charge this four cubic inches of chloroform vapour would saturate the entire mass of the pulmo-cardiac blood and myocardium tissues. Hence these chloroform cases, like those particular drowning cases, are irretrievable by artificial respiration. The myocardium has been killed.

Referring to the injection of chloroform into the blood-vessels I am not unmindful of the fact that this was done under the Hyderabad Commission. But the Hyderabad report on that point is badly given and the results are inconclusive. Moreover, those injections were made into the jugular vein after the vein had been tied. Now, tying the jugular vein would stop the current through that vein, and it is not safe to surmise as to how much of that chloroform arrived in the heart or how long it required for such chloroform to arrive. Again, such chloroform as did arrive in the heart would go into its right side. Now, the right heart has always been accustomed to contact with blood charged with carbon dioxide, whereas the left heart has always contained pure oxygenated blood. The result, therefore, of the contact of chloroform with the different sides of the heart may be as different as the results of the presence of urine in the urinary bladder or in the peritoneum.

In using the improved Krohne inhaler it can be demonstrated that a full manual compression of the bellows projects four cubic inches of air saturated with chloroform vapour into the mask, which I have called the mixing-box. Taking this as giving one cubic inch of chloroform vapour, and assuming that the on-coming inspiration draws 25 cubic inches of air through the mixing-box, we have 1 in 25, or 4 per cent., for the vapour volume of chloroform in the inspired air. If one full manual compression be given into the ebb tide of each expiration (as described in my letters in THE LANCET of Sept. 30th (p. 922) and Oct. 28th (p. 1205), 1899) it follows that in one minute the patient will have received the vapour of some 20 minims of liquid chloroform into his lungs. Some of this 20 minims will have been exhaled by the lungs and skin, and as it requires 18 minims in the blood to induce full surgical anæsthesia this generalised effect will not be reached. But the ingested chloroform is probably a lethal dose by reason of the want of time for diffusion through the general system and the local surcharging of the pulmo-cardiac blood. For that reason a much smaller injection for each inspiration is directed, and from the commencement of the administration to the induction of full surgical anæsthesia about six minutes is best as the least period.

The perfectly safe exhibition of chloroform is to be attained by beginning with small volumes of chloroform air for each inspiration, such as provoke neither cough nor resistance — certainly no spasm of the glottis. Here I differ somewhat from the text of the directions given by Dr. Clayton Lane, inasmuch as while I watch closely the phenomena of the anæsthesia I also cause myself to know where I am by regulation of the amount of chloroformed air injected for each inspiration. I thus use the two guides—observation and dead-reckoning—and I make the feather-indicator my index for the respiratory currents.

Manchester-square, W.

THE USE AND ABUSE OF PRESERVATIVES.

BY SAMUEL RIDEAL, D.SC. LOND., F.I.C.

THERE are two or three points arising out of the recent papers which have appeared in THE LANCET which some experiments of mine, conducted during the last six months, seem to throw some light upon. When I was fortunate enough to secure the coöperation of Mr. A. G. R. Foulerton at the end of 1898 for investigating this problem in my laboratory I realised that it was of a twofold character, and in the paper published in *Public Health* in May last by us we expressed our opinions (1) as to the quantities of preservatives necessary for preserving milk, and (2) the possibility of such quantities having injurious effects upon the consumer. In that paper we promised to extend our investigations, and as circumstances arose which necessitated our working in separate laboratories Mr. Foulerton continued the investigation into the second branch of the subject whilst I have recently confined my attention to the former. At the same time I should like to take this opportunity of saying that I fully agree with Mr. Foulerton in the conclusions which he has drawn in the very able papers published in THE LANCET of Nov. 25th (p. 1427) and Dec. 9th (p. 1577), 1899.

A good deal of the work which has recently been done on this subject has assumed the possibility of comparatively large quantities of preservative material being present in the food-supply, and there seems to be some hesitation in accepting the proposition which Mr. Foulerton and myself advanced in the paper above referred to—viz., that 1 part in 2000 of boric acid mixture and 1 in 50,000 of formaldehyde were quantities of preservatives sufficient for keeping milk sweet for a period of 24 hours even in warm weather. It is well known that at the present time these quantities are frequently exceeded, but I have been unable to find any experiments on a sufficiently large scale to warrant my believing that the milk trade necessitates higher quantities of these preservatives being added. I am assuming that the Departmental Committee at present dealing with this question will make it compulsory for the

presence of any preservative in milk to be declared at the time of purchase, as I think that there is now a consensus of opinion that it is highly desirable that in special cases, such as in the case of invalids, it should be possible for the consumer to obtain a milk free from preservative, and that in all cases it is only fair that the consumer should be aware of the preservative if present. The views of Mr. Foulerton and myself as to the effect upon the health of adults and children of the above quantities of preservatives have already been stated in the paper referred to, and I need not go further into this matter, but the advisability of allowing greater amounts of preservatives than those mentioned to be present in "declared" milk is determined by the question whether the larger quantities are necessary for trade purposes. This point, of course, depends largely upon what is understood as "sour milk" by the consumer and this must obviously depend upon the acidity of the milk expressed in terms of lactic acid. In the following table I summarise the results obtained in a series of experiments undertaken to ascertain this point. Quantities of fresh milk containing (1) 1 in 2000 of boric acid, (2) 1 in 50,000 of formaldehyde, and (3) a control, were measured into balloon flasks and loosely plugged with cotton-wool. These sets were then incubated at the following temperatures: 13°C., 18°C., and 24°C. (as representing approximately winter, medium, and summer temperatures); and 25 cubic centimetres were taken out from each and titrated every few hours with decinormal soda, using phenol-phthalein as an indicator, the total acidity being calculated to lactic acid (one cubic centimetre N/10 soda = 0·009 gramme of lactic acid). The original milk at starting required five cubic centimetres N/10 soda per 25 cubic centimetres, corresponding to 0·18 per cent. of lactic acid.

TABLE I.

—	Per cent. lactic acid.		
	13° C. (55·4° F.)	18° C. (64° F.)	24° C. (75·2° F.)
Fifteen hours.			
Blank	0·182	0·202	0·232
Boric acid	0·180	0·180	0·216
Formaldehyde	0·182	0·180	0·194
Twenty hours.			
Blank	0·184	0·205	0·245
Boric acid	0·180	0·198	0·220
ormaldehyde	0·178	0·179	0·198
Twenty-three hours.			
Blank	0·184	0·210	0·281
Boric acid	0·180	0·180	0·241
Formaldehyde	0·178	0·184	0·223
Thirty-nine hours.			
Blank	0·191	0·392	0·799
Boric acid	0·178	0·259	0·648
Formaldehyde	0·173	0·209	0·590

From these results it will be noticed that at the lowest temperature—viz., 13°C.—even after 39 hours there is no increase in the acidity of the milk containing boric acid and formaldehyde, the actual titration recording a slightly lower amount of lactic acid. (The possible experimental error in these figures amount to ± 0·007 per cent. of lactic acid.) In these two milks at 18° C. there is no appreciable rise in the acidity till after 23 hours' incubation, whilst the unpreserved milk shows a gain of about 15 per cent. In considering the results at 24° C. the question arises as to what maximum acidity can be allowed to milk without its being pronounced sour.

Thorner[1] has investigated the acidity requisite to coagulate milk. Titrating under similar conditions to the above he found that milk coagulated on warming when the acidity reached 23° (cubic centimetres N/10 soda per 100 cubic centimetres of milk), corresponding to 0·207 per cent. of lactic acid. I have found the coagulating point somewhat higher than this. Normal milk was incubated at 22° C. and every few hours a fraction was removed and tested by heating to 100° C. for five minutes and also by pouring some of the milk into boiling water, the acidity being determined at the same time.

TABLE II.

No. of hours.	Degree of acidity.	Per cent. of lactic acid.	Coagulation tests.
1	18·0	0·162	Both tests negative.
4	19·0	0·171	Ditto.
6	19·2	0·173	Ditto.
8	19·6	0·176	Ditto.
11	20·4	0·184	Ditto.
15	28·0	0·252	Coagulated at 100° C., but not by pouring into hot water.

Therefore, when the acidity exceeds 0·25 per cent. lactic acid the milk would be considered sour and unfit for sale, and taking this as the maximum acidity allowable it will be seen from Table I. that in all cases the milk has been kept sweet by the 1 in 2000 of boric acid and 1 in 50,000 of formaldehyde for over 23 hours. In repeating this experiment with a milk incubated at 18° C. it was found that when the acidity was equal to 25·6°, or 0·230 per cent. of lactic acid, the milk was sufficiently acid to cause a slight coagulation on heating on the water-bath. It will therefore be seen that Thorner's limit of 0·207 per cent. of lactic acid is rather too low and that from 0·23 to 0·25 per cent. of lactic acid is the limit which may be regarded as safe for dietetic purposes. Even if Thorner's limit of 0·207 per cent. of lactic acid be taken it will be seen that the quantity of boric acid and formaldehyde suggested are ample for keeping a milk sweet for 23 hours at 18° C. But the quantity of boric acid is insufficient for keeping it sweet for a longer period than 15 hours, and of formaldehyde for a longer period than 20 hours, when the temperature is as high as 24° C. The initial acidity of milk varies very considerably, and even in milk examined within an hour of the time of milking the quantity of acidity calculated as lactic acid may be as high as 0·1 per cent., so that, taking it generally, the work required of the preservative is to arrest the production of one-tenth per cent. of acidity calculated as lactic acid in the milk during the time which must necessarily elapse between the time of milking and the time of consumption.

As the souring of milk is due to the development of several organisms it by no means follows that the smell or taste of an unpalatable milk is measured by the amount of acidity as determined by titration. But as the coagulation of milk apparently depends upon this factor, irrespective of the nature of acidity, it seems reasonable to take it as a measure of the quality of milk. I have, however, observed slight coagulation in milk when the acidity has been as low as 0·194 per cent. of lactic acid.

Another important point to bear in mind is that a preservative is obviously more efficient if added to the milk at the time of milking so that the development of the organisms present in the milk is retarded from the very commencement, and this points to the conclusion that the legitimate use of preservatives should be restricted to its use by the farmer or cowkeeper and not by the middleman or vendor or consumer. It is urged by some that the consumer could preserve his milk if he thought it was necessary, but without entering into a discussion of Dr. M. K. Robinson's case, and dismissing for the moment Dr. O. Liebreich's reply to it, which in my opinion seems clearly to establish that the poisoning was not due to boric acid, such a method of dealing with the problem would open the way to future cases similar to that of Dr. Robinson in which excessive doses of preservatives might be taken by susceptible individuals.

It may not be generally known to readers of THE LANCET that in the case of butter the loss of flavour and the beginning of rancidity are very carefully gauged by experts, so that points or marks of value are assigned to butters which give their commercial value. In the report for the New Zealand Department of Agriculture for 1898 Mr. Sorensen shows that butter containing 3 per cent. of salt and ½ per cent. of boric acid and subjected to cold storage yields on keeping a butter having the greatest number of points, 37 out of 45, whilst butters with 1 per cent. of boric acid and only 2 or 3 per cent. of salt gave an inferior result, and those containing either more or less salt without boric acid had lost still more flavour. These results are extremely

[1] Chemische Zeitschrift, 1891, p. 1108.

interesting as showing that in this particular case it is to the interest of the trader to keep the boric acid low, as from the commercial point of view the butter with ½ per cent. of boric acid has a better flavour and will fetch a better price than that containing 1 per cent.

The last point which I wish to refer to is the value of feeding experiments in connexion with this subject. Those published by Mr. Foulerton and myself with milk containing formaldehyde were of value in establishing the fact that adult animals, notwithstanding the fact that their body weight was far less than that of man, could consume large quantities of milk preserved with moderate amounts of preservatives without apparent injurious effect. It has been pointed out by Dr. H. E. Annett and others that the cats used in these experiments were three months old, but we did not mention the fact that we had previously attempted to feed kittens three weeks old similar to those used by Dr. Annett. These attempts, however, were unsuccessful, as we found that kittens at this age, when taken directly from their mother, were not capable of assimilating their food when the food consisted only of undiluted and unpreserved cow's milk, and six kittens died under our hands. I attribute this partly to the fact that cow's milk is an unfit food for these young kittens, as it is well known that the characteristic of cat's milk is a very large percentage, amounting to 6 per cent., of albumin, a constituent which is only present in cow's milk to the extent of about ½ per cent., so that such food is as unsuitable for young kittens as undiluted cow's milk is for infants. It will be noticed in Dr. Annett's experiments that in these young kittens the results were very irregular, and that whereas the normal rate of increase per week should be from 30 to 40 grammes, or roughly 10 per cent. of the body weight, in kittens receiving untreated milk in some cases he actually obtained decrease in weight and in others only an increase of two or three grammes. The heavier and older the kittens the more reliable are the results. Another significant point in Dr. Annett's experiments is that the larger quantity of preservative—viz., 80 grains per gallon—did not seem so fatal as the milk containing half this amount, as it will be noticed that with the smaller quantity of preservative he obtained two deaths out of five in the third week, whereas with the larger quantity all of the animals survived this time. Similar irregular results were obtained by him with the milk containing formaldehyde, as he obtained three deaths with the weaker solution, none with the formaldehyde of 1 in 25,000, and two with the stronger solution. Before these experiments of Dr. Annett were published I had carried out a few feeding experiments with kittens about five weeks old, at which age they can take cow's milk freely, but I restricted the quantity to about 70 cubic centimetres per animal per day and used the preservative in the proportions already advocated, so that each kitten received about half a grain of boric acid per day. The results are summarised as follows:—

TABLE III.

	Average weight in grammes of animal fed on—			
	Milk.	Milk + formaldehyde.	Milk + boric acid. (1)	Milk + boric acid. (2)
First week	517	591	595	630
Second week	537	657	646	664
Third week	610	674	684	744*
Percentage increase in weight on first week.				
Second week	3·87	11·1	8·6	5·4
Third week	13·00	14·1	15·0	18·1

* In the third week this kitten was fed on formalised milk instead of on borated milk.

Making allowance for the difference between different animals and the irregularities always noticed in animal experiments, the natural increase cannot be said to be interfered with. All were active and healthy at the conclusion of the experiment. As pointed out by Dr. Liebreich we have in Dr. Annett's experiments no information given us as to the quantity of milk supplied to the kittens, and it is quite possible that they received a much larger quantity of preservative than the above. As a kitten weighs approximately one pound and I gave mine half a grain of boric acid per day, it would follow that a child six months old, weighing 12 lb., could take, therefore, six grains of boric acid a day, or, say, a pint and a half of preserved milk. If any value, therefore, is to be attached to animal experiments, the relation of body weight to the amount of preservative exhibited must be taken into account. Of course, this relation is recognised in the Pharmacopœia, but it is well known that the usual allowance for doses for children of some drugs does not obey any definite law. In the Pharmacopœia this quantity of six grains of boric acid per day for a child six months old would be about eight times the medicinal dose. I am, therefore, inclined to agree with Mr. Foulerton that experiments on animals have, after all, but a very slight bearing upon the problem under investigation. As Dr. Liebreich points out, even regarding Dr. Annett's experiments in their most favourable light they by no means prove that boric acid and formaldehyde are poisonous for young children, even in quantities largely in excess of those which would be possible in a milk diet when the preservatives were regulated in the way suggested.

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MYOIDEMA IN PULMONARY TUBERCULOSIS.

BY HUGH WALSHAM, M.A., M.D. CANTAB., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN TO THE CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST.

IF in an advanced case of pulmonary tuberculosis a point on the chest wall corresponding to the clavicular origin of the pectoralis major be sharply struck with the tip of the forefinger the phenomenon usually known as "myoidema" will probably be produced. Myoidema may be divided into two varieties—viz., the fascicular and the nodular. The fascicular variety is the one most easily produced. At the point which is struck a sulcus is formed which quickly travels to the origin and insertion of the muscle, where it is lost. In the nodular variety there is formed at the point struck a small quivering tumour which, after oscillating backwards and forwards, as if uncertain of its position, for a second or two, finally comes to rest and after a few seconds gradually fades away. If the point struck be carefully watched the initial pallor produced by the blow quickly gives way to redness, reminding one forcibly of the *tache cérébrale*. This redness of the skin remains for a considerable time, occasionally for ten minutes or even longer, before it finally disappears. Both the fascicular and nodular variety may be obtained in other muscles besides the great pectoral. It is very commonly found in the deltoids and scapular muscles, especially in the infra-spinatis. After the tumour has faded away it may again be produced by another tap on the muscle, not necessarily in the same spot but near it. The phenomenon can be produced a third or even a fourth time, but not afterwards, the muscle apparently becoming fatigued and refusing to contract to the stimulus.

The phenomenon of myoidema is nothing new. The condition was described long ago by Dr. Stokes[1] of Dublin, but not under its present name. Dr. Stokes's words are as follows: "There is another highly interesting circumstance connected with percussion which we do not think has as yet been described. Some time ago on percussing a patient who had laboured under a pectoral affection with several symptoms indicative of tubercular development we were surprised to observe that after each stroke of the ends of the fingers a number of little tumours appeared answering exactly to the number and situation of the points of the fingers where they had struck the integuments of the chest. These having continued visible for a few moments subsided, but could be again made to appear on repeating the percussion." The term "myoidema" was first made use of by a surgeon, the late Mr. Lawson Tait[2], who wrote a monograph on the subject. He considered the sign to be

[1] Dublin Hospital Reports, vol. v., p. 70.
[2] Myoidema in Phthisis, 1872.

diagnostic of pulmonary tuberculosis. Dr. Samuel West[3] in a paper on myoidema pointed out that the sign was by no means limited to cases of pulmonary tuberculosis, but that it could be obtained in a number of other wasting diseases, such as enteric fever, progressive muscular atrophy, &c. In a later paper by M. Jeanselme and M. Lermoyez[4] it is asserted that myoidema can be obtained in persons in perfect health—that it is merely a physiological phenomenon. With these authors I cannot agree. I have never been able to obtain the sign in a perfectly healthy person.

Now as regards the value of myoidema as a sign of pulmonary tuberculosis it will be seen from the above quotations that authors are by no means agreed on the point. Dr. Stokes says: "There is nothing in this muscular irritability peculiar to phthisis, but that it is commonly connected with irritation of the lung or pleura there can be no doubt, and in this way, like other signs of irritation, it becomes available in the diagnosis of phthisis." Sir William Broadbent is reported to have said in the discussion on the preventative and remedial treatment of tuberculosis at the meeting of the British Medical Association at Portsmouth that among the physical signs of early phthisis he regarded two as of great value, viz., an occasional sibilant râle at the apex and myoidema, the latter practically being never absent in early phthisis. Dr. Stokes also says that myoidema is always most evident in the earlier periods. On my appointment as an assistant physician to the City of London Hospital for Diseases of the Chest, now some four years ago, I determined to investigate the value of this sign in pulmonary tubercle. Dr. West says in his paper that he had no statistics to show its relative frequency in phthisis. I have examined every case of pulmonary tuberculosis in my out-patient room with reference to the presence or absence of this sign. The total number of cases available is 1000. Firstly, I cannot agree with those physicians who maintain that myoidema is an early sign. I have never found it in an early case. It certainly only becomes well marked when the wasting has advanced beyond a certain degree. A suspicion of the fascicular variety may sometimes exist in an early case, but never the nodular. In fact, the rule that the more the wasting the more marked is the myoidema has few exceptions. The blush following the tap on the muscle is almost as characteristic as the myoidema itself. Authors differ, again, as to the question of position. Some maintain that myoidema is only found on the affected side in cases of unilateral phthisis, if such a condition exists. Others, again, say that it is to be found only over softening tuberculous foci. I am sure, however, that it may always be obtained on both sides when it is carefully looked for. I do not think that the stage of the disease in which the lung may be makes any difference to its production. I have often in very advanced cases with great emaciation been unable to obtain the phenomenon, the great pectoral muscle apparently being too much wasted to produce it. Dr. West states that the electrical reactions have been found altered in these cases. I have made many observations with both battery and coil currents but could find no alteration in the normal electrical reactions.

I think that cases of pulmonary tuberculosis may be divided into three classes with respect to this sign, corresponding closely to the three classical stages of the disease. In the first class I should say that the sign was absent in the vast majority of cases, although a faint fibrillar contraction may occasionally be obtained. In the second class the fibrillar variety can always be obtained and frequently the nodular variety, and in the third class the nodular variety may nearly always be produced, with the exception stated above. I think that myoidema is nearly valueless as an early sign of pulmonary tuberculosis. It only becomes well marked when other physical signs leave no doubt about the diagnosis of pulmonary tubercle. The sign is of value, I think, as indicating the condition of the muscular system of the patient and as showing approximately the amount of wasting that has taken place.

Harley-street, W.

[3] St. Bartholomew's Hospital Reports, vol. xv., p. 151.
[4] Gazette Hebdomadaire, vol. xxii., 1885, p. 453.

BRISTOL MEDICAL CHARITIES.—During 1899 the employés of Messrs. J. S. Fry contributed £746 to the medical charities of Bristol.

DEPILATION BY ROENTGEN RAYS.

BY NEVILLE WOOD, M.D. DURH., M.R.C.P. LOND.

I VENTURE to hope that the following case may prove of interest as indicating the value of the treatment by the Roentgen rays and as a contribution to the study of dosage according to the result which is aimed at.

A woman, aged 22 years, consulted me in November, 1898, on account of a considerable overgrowth of hair on the face. The history given was that 14 months previously one inferior turbinate bone had been removed and that about three months subsequently the hair on her face, which was not previously excessive, took on active growth. During the two or three months before her visit it had become sufficiently conspicuous to excite frequent comment by acquaintances and strangers. At the date of her visit the following note was made: "A healthy-looking, fresh-complexioned brunette; all the bodily functions stated to be regularly performed, nothing remarkable about the hairy scalp, and the body hair said not to be in excess. Face.—On the upper lip from a point half an inch from the middle line and extending outwards on each side for three-quarters of an inch there is a moderately close growth of dark, rather thick hairs, mostly about a quarter of an inch long. In front of the ears there is a slight excess of hair, and this growth is continued on each side down to the angle of the jaws, the length of the hairs increasing as this point is reached. On the chin the hairy growth is most conspicuous and disfiguring. From the point, extending one inch upwards, three-quarters of an inch backwards, and one inch transversely, there is a groundwork of closely-set down and in addition numerous thick dark hairs from one-eighth of an inch to one inch in length."

For this reason and on account of the known incidence of dermatitis it was decided to treat first this area and it was found convenient to begin with the front part of the chin, the rest of the face and neck being protected with a lead-foil mask. The sittings took place, when possible, six times a week and the duration of each sitting was 10 minutes. The distance between the anticathode and the skin was between six and seven inches. The current through the primary coil was maintained at about five ampères and the number of interruptions varied between 250 and 300 per second. After 14 exposures it was noticed that the darker hairs had lost some of their lustre and a week later there was an obvious lessening in their number. The shed hairs were brittle and pale in colour with atrophic bulbs, while microscopically the normal striation was indistinct and the medullary substance appeared to be collected into separate nodes with clear intervening spaces. During this period occasional slight reddening of the skin was noticed. The treatment continued till 45 exposures had been given to the point of the chin, when the whole of the very thick downy and hairy growth had disappeared except nine hairs which remained at least a week after the total removal of the others. Mechanical interference having previously, for obvious reasons, been avoided it was now judged right to ascertain the condition of these residual hairs. On applying the gentlest traction to one it was found that it was really separated at its bulb, which was deeply placed but was held by a more superficial part of the root-sheath so that the rest were left untouched, and as it was now clear that the object aimed at had been attained, and as the skin was somewhat reddened a message was sent that treatment should be directed only to the under surface of the chin. This message miscarried, so that the front received a few more exposures, and a sharp attack of dermatitis ensued, which, however, speedily subsided under simple treatment. 20 exposures were also given to the under part of the chin and 10 consecutively to the cheeks. The result, some eight months after the cessation of treatment, can probably be safely judged, since for more than three months there has been no change in the condition. The front of the chin, which received more than 40 exposures, remains quite free from down and hair. The under surface, which had 20 exposures, is cleared of down, but within three months of suspension of treatment a few thick hairs returned. Their number, however, has not since increased, and they are so sparse that electrolysis would seem to be indicated for them. The cheeks, which had a small number of exposures, I am informed, temporarily lost all their hair, but it has now

re-grown as before, and this part will not be dealt with again till the patient can arrange for continuous sittings.

It would seem, if the above case can be taken as a guide, that 10 short exposures are useless, that about 20 exposures will clear the ground for electrolysis or simple traction if for any reason the ray treatment has to be suspended, while some number of exposures between 30 and 40 will probably result in permanent alopecia, though it is to be expected that with further experience this number may be reduced, so that a treatment which neither pains nor disfigures may take its proper position in practical therapeutics. It is right to state that the whole of the technical arrangements were designed and most intelligently carried out by Mr. Isenthal, to whom I wish to express my great indebtedness.

Elvaston-place, S.W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF RECTAL DEFORMITY.

BY I. G. MODLIN, M.D., B.S. DURH.,
HONORARY SURGEON TO MONKWEARMOUTH HOSPITAL.

DURING September, 1899, I was asked to operate on a woman for deformity in the perineal region. On examination I found a well-formed perineum and a slight dimple in the position in which the anus should be, but no opening or sphincter. The vulva to external appearances seemed to be normal, but on separating the labia a moveable septum was seen, which proved to be formed of the posterior vaginal and anterior rectal walls. It was about one-sixteenth of an inch in thickness and was freely moveable from before backwards. The condition was not one of cloaca. The vagina and rectum were, excepting at their orifices, intact, so that the urethra, vagina, and rectum all opened into one common vulva. The vaginal and rectal tubes might be compared to the two barrels of a double-barrelled gun, the muzzles of which were seen on separating the labia. The patient was 24 years of age, had been married four years, and had had two abortions. The condition described had evidently existed from birth. It had given rise to no symptoms beyond an obstinate constipation and the unpleasantness due to the abnormality. The constipation was extremely troublesome and had probably been to some extent caused by the patient putting off the act of defecation as long as possible owing to the pain and discomfort produced. An aperient and generally an enema were necessary to procure relief. The act usually took about half an hour and caused such severe pain that the patient nearly always fainted, and it always caused hæmorrhage.

After the usual preparation I operated, the patient being anæsthetised with chloroform. I first cut through the perineum in the middle line from the posterior angle of the vulva to the normal situation of the anus. I continued the incision upwards through the fibrous tissue filling in the space between the rectum and the coccyx. I then separated the posterior wall of the rectum for about two inches. The next step was to dissect up the recto-vaginal septum, thus separating the two passages The sides of the rectum were then separated from the surrounding tissue and the lower end of the rectum was freely moveable. I brought it backwards through the opening I had made for it in the fibrous tissue to its normal situation and sutured it with fine silk sutures posteriorly and laterally to the skin of my first perineal incision. I then again brought to the middle line the two flaps produced by the first incision to form the new perineum and sutured them together with silk sutures, deep and superficial. The posterior border of this new perineum was sutured to the anterior wall of the rectum, this completing the new anus; and the anterior border of the new perineum was sutured to the raw surface of the posterior vaginal wall, thus completing the vagina.

The case went on very promisingly, the temperature never rising above 99·8° F. for 12 days after the operation, when constipation proved very troublesome; there had been a motion every day, but scybalous masses formed, so that chloroform was again administered and the scybala were broken down with a Volkmann's spoon. From this time the patient made an uninterrupted recovery. The present condition is most satisfactory. There is a good, firm perineum one and a half inches long and the vagina is perfectly normal. The constipation is greatly improved and is still improving under treatment by cascara, strychnine, belladonna, and aloes. There is no hæmorrhage with defecation and the act is easily performed. There is perfect control over the bowel, so that I believe the muscular fibres of the rectum have accommodated themselves to circumstances and have undertaken the functions of a sphincter.

I publish this case as I have never seen reported, or heard of, one in which the condition of the parts was precisely similar.

Sunderland.

SOME REMARKS ON THE DIAPHRAGM.

BY ROBERT LEE, M.D. CANTAB., F.R.C.P. LOND.

ONE of the symptoms that occur frequently in influenza is pain in the back and round the lower part of the thorax. Having made observations from personal experience I have come to the conclusion that this symptom is due to some trouble affecting the diaphragm and that probably some of the symptoms which we find difficult to explain may be referred to the peculiar characters of the diaphragm and the important part which it plays in the physics of respiration. The line of pain round the thorax is that of the insertion of the diaphragm tendon, while that in the back is due probably to its connexion with the two lowest ribs and the transverse processes of the two first lumbar vertebræ. The question of interest when we are considering the diaphragm is how far the sympathetic nervous system regulates its action. The two ganglia diaphragmatica lying just above the suprarenal capsules connect the phrenic nerve with the solar plexus, and as the diaphragm is in action at all times and to a great extent independently of the will we may conclude that it differs from the muscles which are supplied only with voluntary nerves.

Another peculiar symptom of influenza is the dry and somewhat spasmodic cough, which is apparently due to a spasm of the diaphragm, and it has occurred to me that the cases of collapse or sudden death which we have been accustomed to attribute to heart-disease, though we find nothing clearly to account for them, may be due to some cramp or spasm of the diaphragm.

When we consider how vomiting, hiccough, and certain other disturbances of the thoracic and abdominal organs are apparently caused by the faction of the diaphragm we may give more attention to this very important muscle than it has yet received. Some years ago, when the subject of sudden death required my attention and I had opportunities of making many post-mortem examinations for Mr. Bedford and others of Her Majesty's coroners, it was not by any means unusual to find no definite cause to account for death. Whether the diaphragm is liable to cramp and consequently respiration may be arrested suggests itself as a question worth reflecting upon, and though it is not in any way proper to theorise on such a matter we may do well to make inquiry by observation or otherwise when reason induces us.

West Kensington, W.

POTT'S DISEASE OR FRACTURE OF VERTEBRÆ?

BY W. R. TOWNSEND, M.D.

THE patient, a girl, six years of age, had an obscure history. Two years ago, when living with her grandmother, after an accident in which she fell down a flight of stairs, striking the back of her neck, a bony prominence was noticed. This was accompanied by difficult respiration and a habit of supporting her head with the hand placed under the chin. Kyphosis was marked, as shown by the accompanying illustration, the sixth and seventh cervical and the first and second dorsal vertebræ being involved. There was a depression of the upper cervical vertebræ. Dr. A. B. Judson, when the case was shown at the Section of Orthopædic Surgery at the New York Academy of Medicine,

thought that the number of the involved vertebræ pointed away from fracture and towards Pott's disease. Dr. Sayre said that although a forward position of the head in cervical Pott's disease was frequently attended by difficult breathing, he thought that the child had suffered a fracture

Pott's disease or vertebral fracture?

and recalled the case of a man who had fallen downstairs, striking the back of his head, when partial paralysis of the arm developed from pressure.

The treatment was not doubtful even if the diagnosis was not clear. The affected vertebræ should be given complete rest. This must be effected either by a plaster jacket and head-spring or by a posterior spinal support and chin-piece. The latter would be less conspicuous and give better support, with or without the addition of supports going up the back of the head, as might be determined by the progress of treatment, which should be prolonged until the disappearance of all signs of an acute condition. Ultimately the patient should carry the head erect without much deformity, as is the rule in cervical disease thus treated.

New York.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ROYAL FREE HOSPITAL.

A CASE OF COMPOUND SEPARATION OF THE LOWER EPIPHYSIS OF THE FEMUR; RECOVERY WITH USEFUL LIMB.

(Under the care of Mr. E. W. ROUGHTON.)

THE valuable suggestion made by Mr. Jonathan Hutchinson, jun., as to the treatment of separation of the lower epiphysis of the femur is not equally applicable to all cases. The complete replacement of the separated epiphysis effected by flexion is in part dependent on the integrity of the periosteum; if this is extensively separated or if it sloughs, then the forced flexion of the knee will not suffice to bring into apposition the displaced surfaces, and this is probably the explanation of the difficulty met with in the case recorded below. Compound separations also are less suited for this method of treatment, which is, however, highly ingenious and of the greatest service in suitable cases. For the notes of the case we are indebted to Mr. C. Sprawson, late house surgeon.

A boy, aged five and three-quarter years, was taken to the Royal Free Hospital in a collapsed state on July 28th, 1899. He had been riding on the back of a cab and had caught first his right and then his left leg between the spokes of one of the wheels. On examination there was on the left side a simple fracture in the upper third of the femur; on the right side the diaphysis of the femur was protruding to a distance of three inches through a popliteal wound about five inches in vertical length. The periosteum was stripped from this part, whilst the lower end presented the roughly stellated facet which is characteristic of an epiphyseal junction. The patient in addition was slightly concussed. The wound was purified as far as possible and the boy was admitted into the ward. Two hours later chloroform was administered in order that a more thorough examination might be made. The popliteal artery was now found to be uninjured and the arteria dorsalis pedis could be felt pulsating. With a finger in the wound the lower epiphysis could be felt to be rotated backwards, as is usual, whilst the displacement could be reduced in the manner recently described by Mr. J. Hutchinson, jun.—i.e., by right-angled traction on the leg with complete flexion of the knee. After purification of the wound and its surroundings two tubes were inserted for drainage into the wound, a dressing was applied, and the leg was bandaged in a completely flexed position, hot water-bottles and sand-bags being used to assist in propping it up. The fracture of the left femur was treated by being placed on a Mackintyre splint. On the next day (July 29th) the leg was found to have slipped from its completely flexed position to an angle of about 45 degrees with the thigh. The temperature was 102° F. and the child was slightly delirious. At this time the urine was found readily to reduce Fehling's solution, possibly an after-effect of the anæsthetic. On the 30th, the temperature being 103·6° and the patient very delirious, Mr. Roughton ordered the head to be shaved and an ice-bag to be applied. On the 31st it was evident that the wound was very septic and numerous periosteal sloughs could be seen. The child was still delirious and the leg was kept at an angle of about from 45 to 60 degrees. The flexed condition of the limb was painful if beyond 60 degrees and was difficult to maintain even at this; the displacement of the epiphysis recurred, however acute the angle. The dorsalis pedis artery could still be easily felt pulsating.

On August 1st an anæsthetic was given. The sloughs were removed as far as possible and the wound was syringed out with a 1 in 40 carbolic lotion; one drainage-tube was left in and the limb was fixed upon a posterior right-angled splint, intended originally for an anterior arm splint. The left leg was now put up upon a long Liston splint and extension was applied in order to keep the boy more steady in the bed. On the 3rd the delirium ceased although the evening temperature was still 102°. For the next few days the limb did not improve; the smell from the wound was very foul, the position of the epiphysis was not good, and the daily dressings caused the child great pain. His general condition was feeble although he took his food very well. It was evident that drainage was imperfect. On the 11th, therefore, Mr. Roughton examined the limb under an anæsthetic with a view to determine the question of amputation. Deciding to give the limb a further chance Mr. Roughton sawed off the lower half-inch of the shaft of the femur which was necrosed, and chipped off other fragments up to the line of demarcation between the dead and living bone. Much periosteal slough was removed and it was now found that the knee-joint was affected and full of pus. The whole wound was syringed out, the posterior wound was enlarged, and two anterior vertical incisions were made one on either side of the patella, drainage-tubes being passed through from these to the posterior wound. The limb was now put up in a straight position and on the next day, for the sake of convenience in dressing the wound, a long Liston splint with a bracketed interruption at the knee-joint was applied and an extension of six-pound weight was put on below the knee.

For the next week the boy seemed to be rather better, although there was still much purulent and foul discharge. On August 23rd, however, his temperature at last came down to normal, beyond which it did not rise at any later date. On Sept. 11th he was much better and smaller drainage tubes were used. These were omitted altogether a week later, when also the extension was removed from both legs and the splint was removed from the left side. The left femur was found to have united well. There was half an inch shortening of the right limb and a slight flexion, making an angle of about 155 degrees, at the knee-joint. A very small range of movement was present in

the articulation. On Oct. 10th the limb was put up in plaster-of-Paris casing, the knee being still slightly flexed and the foot being put up at a right angle as it had acquired a position of partial decubitus. On the 28th the plaster-of Paris was removed and a Mackintyre splint was used with the idea of affecting a complete straightening. This was so far successful that at the present time the flexion is very slight. The wounds are now all healed and the patient's general condition is very good.

Remarks by Mr. SPRAWSON.—Recovery from an accident of the above nature with a useful limb is uncommon. Out of 13 cases of compound separation recorded in detail in Poland's book on "Traumatic Separation of Epiphyses" two were fatal, six suffered amputation, whilst the remaining five recovered with their limbs. In all but one of these five a piece of the diaphysis was sawn away, either at the time to effect reduction or subsequently, as in the above case. In the one exception there was one inch of shortening at the time of recovery, so that there must be some doubt here as to the position of the parts, since in the case above recorded there is but half an inch shortening and this is the exact length of bone removed at the operation. In Mr. J. Hutchinson, jun.'s, recent paper 30 cases are referred to with six cases of recovery with useful limb. The most important factor in the result is the condition of the popliteal artery; in a case admitted to the Royal Free Hospital under the care of Mr. J. Berry, otherwise similar to the above, the artery being torn across, primary amputation was performed. As is seen, the method recommended in the paper of Mr. J. Hutchinson, jun., and Mr. H. L. Barnard in THE LANCET of May 13th, 1899, p. 1275, was adopted in the case now published. Having regard to this the following criticism may be offered. Anything like complete flexion was very painful; it was difficult to maintain owing to the slipping of the bandage; it did not prevent the recurrence of the displacement; and, above all, it put the wound under bad conditions as regards drainage. Hitherto there has been no account given of the subsequent history of the limb in these cases. Most of the accidents occur in boys of from five to ten years of age. It would be of great interest to know the comparative length of the leg ten years later.

EDEN HOSPITAL, CALCUTTA.

A CASE OF ECTOPIC GESTATION; ABDOMINAL SECTION AND REMOVAL OF UNRUPTURED TUBE; RECOVERY.

(Under the care of Captain H. M. EARLE, I.M.S, late resident surgeon.)

THE prognosis in cases of tubal gestation is chiefly dependent on an early recognition of the condition, for when the pregnancy is diagnosed before rupture has occurred the operation for removal of the tube with its contents is comparatively easy and safe. A case in many ways similar to that described below was reported in THE LANCET of July 2nd, 1898, p. 26. Hofmeier[1] gives the results of 14 cases of extra-uterine pregnancy; in nine of these an operation was performed and only one patient died; of the five remaining cases in which no operation was done one patient died from hæmorrhage and one from septicæmia, and three patients recovered; in two of the cases there was spontaneous atrophy of the swelling and in one a lithopædion formed. Mr. J. W. Taylor in his Ingleby Lectures, delivered at Mason College, Birmingham, in 1898[2] mentioned that in his own series of 37 cases in which an operation was performed there was only one death, and in Mr. Mayo Robson's 23 cases there was also only one death. Probably the mortality in all cases of extra-uterine gestation in which an operation is performed, is less than 5 per cent.

A married woman, aged 34 years, was admitted into the Eden Hospital, Calcutta, on Oct. 7th, 1899, with a previous history of having had five children and one abortion. The last child was born two years previously. The patient stated that she had been regular up to August last when she missed a period. About Sept. 9th, when her period was due, she felt very ill suddenly and this was followed by great pain shooting up from the left side over the abdomen. Two or three days later she passed a big clot. She had a second attack of faintness and pain a few days after this. Prior to the first attack she noticed that the breasts were somewhat fuller than usual. Ever since the first attack she had suffered from slight irregular discharges of blood from the vagina and paroxysmal pain in the left side. Morning sickness and ptyalism had been present both before and since the first attack. On examination the uterus was found to be retroverted and somewhat enlarged, with a soft cervix and patulous os. Lying high up and to the left of the uterus and pushing it somewhat over to the right was felt an elastic mass which was very tender on pressure.

Ectopic gestation having been diagnosed operative interference was decided on. The abdomen was opened by a three-inch incision in the median line below the umbilicus. The incision was afterwards extended upwards another inch. The left Fallopian tube, dilated to about the size of a goose's egg, was found to be lying in a bed of intestinal and omental adhesions. At first it looked as if removal of the tube would be impossible without causing some serious damage; separation of the adhesions was, however, effected. The pedicle was then clamped and ligatured as quickly as possible and the tube was removed. The pedicle was then dropped back into the pelvic cavity. During separation of the adhesions a small rupture of the tube with smart hæmorrhage occurred (no previous leaking had taken place). A finger was placed over this to prevent blood escaping into the abdominal cavity until the clamping of the pedicle could be effected, when the bleeding ceased. The cavity left by the removal of the tube was now sponged dry and the abdominal wound was sewn up with silkworm-gut sutures. No drainage was employed. The sutures were removed on the eighth day. The recovery was uneventful with the exception that the subcutaneous tissue did not unite by first intention. This was no doubt due to the extreme nervous restlessness of the patient.

Remarks by Captain EARLE.—On examination of the tube, the fœtus, which appeared to be of from six to eight weeks' development, was found embedded in recent blood-clot and lying inside a membranous sac of the size of a small hen's egg. The sac was surrounded by recent blood-clot about a quarter of an inch in thickness. The wall of the tube was somewhat thickened for the most part, but was becoming very thin at certain points where, no doubt, rupture would very soon have occurred in the ordinary course of events. I am indebted to Captain Bird, I.M.S., for his valuable assistance during the operation.

[1] Centralblatt für Gynäkologie, No. 51, 1895.
[2] THE LANCET, June 25th, 1898, p. 1739.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

The Mastoid Operation for the Cure of Chronic Purulent Otorrhœa: Methods and Indications.

A MEETING of this society was held on Jan. 23rd, Mr. THOMAS BRYANT, the President, being in the chair.

Mr. CHARLES A. BALLANCE made a communication on the Mastoid Operation for the Cure of Chronic Purulent Otorrhœa, with special reference to the immediate healing of the cavity in the bone by means of epithelial grafts. It was pointed out in the first place that the progress in the surgical treatment of suppurations in the temporal bone during the last 20 years was due both to an increase in anatomical and pathological knowledge and to the adoption of true surgical principles, such as were applicable in all operations on bone. The peculiarity of these operations depended on the importance of the structures around. The selection of cases for the complete mastoid operation was surrounded with difficulty, and large experience rather than rigid rule was the best safeguard against, on the one hand, the risk of delay and, on the other, the performance of an unnecessary operation. The cure of chronic otorrhœa could not be effected by a simple opening into the antrum. The complete mastoid operation which involved surgical damage to the tympanic structures was inapplicable to and unjustifiable in acute cases. Mr. Ballance proposed that typical intractable cases of chronic otorrhœa should be treated by two operations: first, the operation for the removal of the disease—namely, the complete mastoid

operation; and, secondly, the operation for the healing of the wound—namely, by the epithelial grafting of the raw bone cavity. The operations were very fully described and notes of 20 cases were appended. Six patients were exhibited showing the successful results of the operation. The systematic employment of epithelial grafts was advocated.

Sir WILLIAM DALBY contributed a paper on Cases of Chronic Purulent Otorrhœa suitable for the Mastoid Operation. His remarks dealt chiefly with the selection of cases of long standing for the complete operation with skin-grafting. Those in which the operation was undoubtedly necessary were: first, cases in which septicæmia had commenced; secondly, cases in which there was dead or carious bone in the tympanic cavity accompanied by ominous symptoms often repeated; and thirdly, whenever there was evidence of mastoid disease of long or short standing. On the other hand, the question of operation was an open one in a certain proportion of cases, where, although there was evidence of dead or diseased bone, there was no reliable history of ominous symptoms. Similarly in patients with intractable otorrhœa without bone disease or ominous symptoms each case must be treated on its own merits. Cases were also described in which a less complete operation (which, however, included free posterior drainage) was necessary. In discussing this question of operation it should be remembered that a large number of people went through long lives with perforations, which at times discharged slightly, and at other times arrived by careful treatment at a dry or apparently healed state. This healed state might last for years, and then on some trifling cause suppuration might begin again and continue for another period of months or even years. During the whole time, beyond more or less deafness and discharge, they experienced no inconvenience. Many of them heard very well notwithstanding the suppuration and perforation, while some of these patients regained excellent hearing; and they were enabled to follow their business or profession by the use of an artificial pad of cotton. It became a very serious question whether this class should be submitted to this extensive operation, and up to quite recently it had not been suggested to interfere further with these.

Mr. A. E. CUMBERBATCH read a paper on the Selection of Suitable Cases for the Complete Mastoid Operation for the Cure of Chronic Suppurative Disease of the Middle Ear. It was now, he said, much easier than it was some time ago to decide when it was advisable to expose the mastoid antrum and throw the iter, attic, and tympanum into one cavity for the cure of chronic suppurative disease of the middle ear. Theoretically the operation should be performed in every case of chronic discharge in which all simpler means of treatment had been fairly tried and had failed. For what length of time these simpler means should first be tried would depend largely on the temperament and experience of the surgeon and on the special conditions of the individual ear. But although theoretically the question of an operation seemed easy enough to answer, yet practically it was not so easy. Hence, in the present state of our knowledge, it might be useful to mention certain groups of cases in which it appeared to him, speaking generally, that radical measures were either inexpedient or should not be undertaken too hastily. First, there was a group where the whole or greater part of the membrana tympani had been destroyed and the mucous lining of the tympanic cavity was greatly hypertrophied (polypoid, in fact), but there was no obvious bone disease. Secondly, there was another group in which there was frequent recurrence of the discharge on slight provocation, although the discharge was on each occasion readily arrested. Sometimes there was a permanent perforation of the membrana; in others the perforation closed as soon as the discharge ceased. Thirdly, there was another group where the question for or against an operation was a difficult one to decide and should not be too hastily answered in the affirmative. These were cases of discharge from both ears in which the hearing was excellent, and there were no symptoms calling for operative interference beyond the discharge. There were, on the other hand, four groups of cases in which a complete mastoid operation should be performed: (1) in cases of the second group in which the onset of the discharge was invariably preceded by malaise, slight headache, and rise of temperature, and occasionally mastoid tenderness or discomfort; (2) "spoilt ears" which, having given no trouble for many years, comparatively suddenly developed marked symptoms of labyrinthine vertigo, from which it was evident that either inflammation was spreading to the labyrinth or some accumulation was exerting undue pressure in that region; (3) cases of intermittent discharge, where inspection of the meatus revealed masses of sodd'ened epidermis, often hiding the presence of small granulations, and where syringing constantly removed white shreddy patches, the usual methods of treatment having failed to effect a cure; and (4) cases of periodic attacks of mastoid pain, commencing some time after all signs of active mischief in the ear had ceased, and where, by excluding superficial neuralgia, it was possible to determine that sclerosing ostitis existed. The operation performed by Mr. Ballance was so nearly perfect, it seemed so easy in skilled hands, it was so safe, and the results were altogether so admirable, that it was certain to widen the area of cases suitable for operation.

The discussion on the subject was then adjourned to the next meeting of the society.

MEDICAL SOCIETY OF LONDON.

The Pathology and Treatment of Appendicitis.

A MEETING of this society was held on Jan. 22nd, Dr. F. T. ROBERTS, the President, being in the chair.

A discussion on the Pathology and Treatment of Appendicitis was opened by a paper by Mr. C. B. LOCKWOOD, an abstract of which will be found on page 225.

Dr. W. H. ALLCHIN approached the subject from the aspect of treatment. He referred to the time when the peritoneum was looked on with the greatest awe and the consequences of interfering with it were thought to be terrible. At that time treatment consisted of an ill-regulated expectancy in which the surgeon had very little or no part. Now, they had gone rather to the other extreme and the position taken by some was that the physician had little or no part in the management of appendicitis. There were, he thought, four groups of such cases from a clinical point of view. 1. There were the acute, severe, or fulminant cases attended by very little preliminary ill-health. The patient was suddenly taken ill with inflammatory symptoms and might die in a few hours. These cases naturally came under the notice of the surgeon. 2. Acute cases, but less acute than the preceding. First there were inflammatory symptoms lasting some days and then symptoms of abscess appeared. These also came naturally within the domain of the surgeon. 3. Sub-acute cases. These came more commonly within the knowledge of the physician. He had seen more of these cases in females. The course of such cases lasted some 12 or 14 days. In these there were pain, tenderness, and might be a swelling in the inguinal region, and vomiting, general disturbance of health, and some elevation of temperature. These cases formed by far the largest group. Their natural tendency was to comparative cure. At least the patients went out and passed away from observation. These were the cases which called for medical treatment and he thought immediate operation was a mistake. A notable feature of these cases was the variation from day to day in the symptoms and in the size of the swelling. 4. There were the relapsing cases, cases with recurring attacks of varying severity at varying intervals. In any case they must make up their minds that it was impossible to lay down hard-and-fast rules. In the first two groups, and whenever unmistakeable signs of suppuration were present, the treatment must be surgical, but the third group might or might not be handed over to the surgeon. Of the various symptoms Dr. Allchin attached most importance to an increase in the rate of the pulse both for the purposes of prognosis and the diagnosis of the actual process which was going on. As to the treatment of this group rest and relief of the bowels by simple enemas or salines were the chief points. He had found no occasion to regret the administration of small quantities of opium in such cases. This statement was perhaps heretical, but he regarded it as beneficial to the patient and indicated by the pulse and other symptoms. This might be supplemented by belladonna and perhaps hot fomentations to the iliac fossa. The relapsing cases offered considerable difficulty in treatment, and in such cases the greatest good might be done by the surgeon, though he did not believe in the rules which had been laid down. Each case must be judged on its own

merits. Many of these cases also benefited by rest and medical treatment.

Mr. ARTHUR BARKER referred to the transfer of the septic organisms through the lymphatic spaces to other parts. Mr. Lockwood had offered an explanation of those difficult cases in which although they appeared to be non-suppurative an abscess would be found behind the cæcum. The appendix in such cases appeared normal to the naked eye. Other cases of extensive cellulitis and even subphrenic abscess following appendicitis might be similarly explained. He would like to draw attention to the power of the peritoneum to control what he might call the ravages of the bacteria. They ought to bear this in mind in surgical treatment, especially in dealing with the omentum and in connexion with the question of washing out. His view was that the peritoneum had more bactericidal power than was generally believed. Consequently he was not in the habit of washing out the abdomen excepting in rare cases. He was inclined to agree with Dr. Allchin in his use of opium. He believed it was, in small doses, very beneficial. He thought a good many cases could be left to the physician. He had seen many cases where conservative measures had been attended by the best results, but, on the other hand, he remembered one case with very few symptoms in which he found a large concretion loose in the abdominal cavity.

Dr. F. J. SMITH remarked that perforation of the appendix was strictly comparable with certain cases of perforating ulcer of the stomach. In both diseases perforation might not be preceded by any notable symptoms. A gangrenous appendix might be found without any preceding pains or other symptoms. As to washing out the peritoneum, he thought it was very difficult to cleanse the peritoneum by washing it. If there were obvious signs of suppuration the surgeon must be called in, but the difficulty often was to make out for certain whether there was pus or not. The rapidity of the pulse was useful and he had been accustomed to rely also on the occurrence of night-sweats. He thought that the commonest anatomical position of the appendix was that of being tucked up at the back of the ascending colon.

The discussion was then adjourned until the meeting of the society on Feb. 24th.

EPIDEMIOLOGICAL SOCIETY OF LONDON.

Bacteriological Diagnosis in School Epidemics of Diphtheria.

A MEETING of this society was held on Jan. 19th, Dr. H. F. PARSONS, the President, being in the chair.

Mr. KENNETH W. GOADBY read a paper upon the Utility of Bacteriological Diagnosis in a Diphtheria Epidemic in a School. In the winter of 1898-99 an outbreak of sore-throat culminating in diphtheria occurred in the Poplar Union Schools at Forest-gate. The schools belonged to the class known as "barrack schools" and were occupied by some 600 children. From March to October, 1898, 27 cases of scarlet fever occurred, and 17 between Nov. 27th and Dec. 31st. On Dec. 15th an epidemic of sore-throat commenced, following three cases of diphtheria in November, and five more appeared during December. On Jan. 21st a bacteriological examination was undertaken and the whole of the 586 children present in the school were examined in the course of six days. The method adopted was the usual one of cultures in tubes of coagulated blood serum from sterile cotton-wool swabs which had been passed over the pharynx and fauces. These were incubated at 37·5° C. for 24 hours and the resulting growths examined by means of coverslip preparations stained with methylene blue. Of the 586 children examined 190 showed the bacillus of diphtheria and 99 that of Hofmann, giving a percentage of 34·1 per cent. of children with the Klebs-Löffler and 16·9 with Hofmann's bacillus. The morphology was relied upon for diagnosis as it was obviously impossible to inoculate animals with all the cultures. The microscopical appearance of the bacillus diphtheriæ as given by Washbourn and Garratt[1] and Eyre[2] was that accepted. Meade Bolton[3] had stated that of 214 healthy persons previously exposed to infection from diphtheria 45·5 per cent. showed the Klebs-Löffler bacillus. Park and Beebe examined the throats of 48 apparently healthy children in 14 families in which diphtheria was present, and in 50 per cent. found the bacillus diphtheriæ. Müller examined bacteriologically 100 children in the general wards of the Charité in Berlin; of these six on entry had the bacillus in their throats without exhibiting any of the signs of the disease. Two days later the bacillus had appeared in 14 others. Many other observers had made similar observations and in most cases the number of infected individuals was large. From November, 1898, to the time the examination was made 21 cases of clinical diphtheria occurred in the schools. After the examination the children were isolated; those showing the diphtheria bacillus were kept in one part of the school, the unaffected ones being confined to another part. School was stopped and all indoor gatherings except at meal-times were also suspended. The two classes of children were kept at opposite ends of the dining hall; all the plates, knives, &c., were boiled after use. Owing to the structural arrangements of the school, its many intercommunicating passages, and other practical difficulties, the isolation broke down, notwithstanding which the number of cases of clinical diphtheria, as well as those of sore-throat, at once declined, so that in February there were only five cases of diphtheria. In March another examination of 50 children, taken at random from the presumably unaffected, was made, with the result that some 30 per cent. were found to have the diphtheria bacillus in their throats. Under these circumstances the school committee decided to again mix the children so that the suspended school duties could be resumed. 18 children were examined before the mixing took place and found to be free from the specific bacillus. 10 days after the resumption of school work the same 18 children were re-examined and it was found in six of them. At the same time the number of sore-throats, as well as cases of clinical diphtheria, again increased for a time. Thus in March there was only one fresh case of true diphtheria but in April nine, and of sore-throats nine were observed during March, whereas in April there were 19. In February seven children who had been at a convalescent home were re-admitted to the school and placed among those supposed to be healthy; of these, three developed diphtheria in a severe form—in fact, these three were the most serious in the whole epidemic. On June 21st 90 children were again examined and 27·7 per cent. presented the diphtheria bacillus, whilst on Sept. 29th 50 children examined showed a percentage of 30 with bacilli in their throats. Another school was also examined for control purposes. In this school no diphtheria had been observed for two years. Of 100 children examined 18 showed diphtheria bacilli. The clinical condition of the throats was also noted when the examinations were made, and in the infected school the number of unhealthy throats was found to be very large; at the infected school out of 586 children 262 had enlarged tonsils, 161 some grade of hyperæmia, and 35 some exudation on the fauces. At the control school in 100 children 31 showed enlarged tonsils and 11 hyperæmia, but none of them had exudation. Of the several classes the children with enlarged tonsils showed the largest number affected with the bacillus diphtheriæ; thus in the Forest Gate School 148 out of a total of 190 children in which the bacillus was found were suffering from some throat affection and 90 of the 148 had enlarged tonsils. In the control school 41 had some unhealthy condition of throat, and of the 18 in which the bacillus was found 14 belonged to the children with unhealthy throats, nine of these having enlarged tonsils. With regard to the source of infection the milk was examined and found to contain virulent diphtheria bacilli, the organisms isolated in pure culture killing guinea-pigs in 48 hours. The water was also examined but with a negative result. The treatment of the children adopted was the spraying of the throats with a 2 per cent. solution of lysol night and morning, any suspicious throats being sprayed with a 0·5 per cent. solution of formalin. The school had been free from diphtheria from September, 1899. A large Aymard's steriliser had been put up and working since June with excellent results, and it was an interesting fact that since the milk-supply had been sterilised there had been no cases of summer diarrhœa in the school, though there was a considerable amount in the district around. The conclusions arrived at were that a bacteriological examination of the children followed by rigid isolation of those shown to have the specific bacillus in their throats was the proper method to adopt in school

[1] Brit. Med. Jour., April 16th, 1899.
[2] Annual of Microscopy, 1889.
[3] Medical and Surgical Reporter, 1896.

epidemics of diphtheria; that milk sterilisation should always be carried out with the whole of the supply, no portion being retained for the use of anyone in the institution (at Forest Gate the officers' portion was taken before the milk was boiled); that the method of sampling probably gave a sufficiently reliable result to determine the progress of the epidemic; and that the unhealthy conditions, especially hypertrophy of the faucial mucous membrane, was a very large factor in the persistence of the diphtheria bacillus in the throat.

The SECRETARY, in the absence of Dr. F. H. BERRY (Watford), read a paper narrating a similar experience at the London Orphan Asylum. Here the 350 boys and 200 girls had little intercourse with the outer world except during the Christmas and midsummer holidays and were kept entirely apart, never seeing one another but in the dining hall and the chapel, where they were separated by wide gangways. The cases occurred among the girls only, though the milk-supply was the same. There had been no outbreak of diphtheria, and few if any cases for many years, when in January, 1898, after the holidays several cases of feverish follicular tonsillitis appeared. On Feb. 25th a case of diphtheria was noticed so typical that antitoxin was at once used before the Klebs-Löffler bacillus had been demonstrated. A series of mild sore-throats was followed on March 27th by a case of diphtheria (clinical and bacteriological) and three sore-throats with the Klebs-Löffler bacillus which were at once isolated. A succession of "throats" lasted until April 30th when after an interval of a week four cases of typical diphtheria and three suspicious throats, one of which developed into diphtheria, occurred between May 7th and 10th. All the cases were of a severe type, but being treated promptly with antitoxin made rapid recoveries. It was then resolved to isolate all children with sore-throats in a vacant house in the grounds, but since these numbered 76 and the accommodation was not sufficient for more than 50 they were divided into dark red and pale red throats; the former, as presumably the worst, were isolated and the latter were sent back to the school. Dr. Washbourn was then asked to examine the whole of the girls and the resident mistresses whose throats presented anything amiss. These were 142 in number, eight being mistresses. Diphtheria bacilli were found in those of three mistresses and 14 girls and Hoffmann's in 33. Two of the mistresses were teachers of music who gave their lessons in glass-walled compartments just large enough to hold the piano, teacher, and pupil, which might have assisted in the spread of the infection. All who, though not ill enough for the infirmary, presented the Klebs-Löffler bacillus were detained in the isolation building for a fortnight, their throats being sprayed with a disinfectant night and morning. A fresh examination showed that only two—one mistress and one girl—were still infective, and these after another week's treatment were pronounced free and no more sore-throats appeared in the school from that time or indeed from the exclusion of those in whom the Klebs-Löffler bacillus was found.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Fœtid Expectoration.—Removal of a Submucous Fibroid by Section of the Uterus.—Volvulus associated with Hernia.—Exhibition of Cases and Specimens.

A MEETING of this society was held on Jan. 12th, Dr. A. G. BARRS, the Vice-President, being in the chair.

Dr. STANLEY DODGSON related the case of a woman, aged 30 years, who had Cough, Fœtid Expectoration, and Occasional Hæmoptysis. The disease was of seven months' duration and dated from an extraction of teeth under ether. The patient had a temperature of 102° F. and was expectorating about 20 ounces of fœtid sputum daily. The only physical sign was impairment of resonance at the left base. Creasote inhalations on alternate days were given for two months, at the end of which time the temperature was normal and the cough and foul expectoration had disappeared, while the patient had put on weight. The patient had remained in good health during the three succeeding months.—A discussion followed in which Dr. H. J. CAMPBELL, Dr. C. M. CHADWICK, Dr. E. SOLLY, Dr. E. F. TREVELYAN, and Dr. A. G. BARRS took part. The chief points raised were (1) the value of creasote given by the mouth as against the so-called creasote chamber; and (2) the difficulties of diagnosis in some cases of fœtid expectoration.—Dr. STANLEY DODGSON replied.

Dr. J. BRAITHWAITE read a paper on the Removal of a Sub-mucous Fibroid by Section of the Uterus. As the case was possibly the first in this country in which the uterus had been opened by what might almost be called Cæsarean section for the removal of a contained tumour it was of some interest. The patient was 41 years of age, a nullipara, and had suffered from exhausting hæmorrhage. The cervix was extraordinarily rigid and could only be dilated by means of Reid's screw dilators under ether. It was then possible to reach an internal fibroid near the fundus. The fibroid was probably not larger than a big horse chestnut, but it was impossible to remove it even *morcellement* as the vagina was very small and the cervix was rigid and undilatable. On Dec. 29th last it was removed by making a central incision in the anterior wall of the uterus, hæmorrhage being prevented by a rubber tourniquet round the cervical end. The tumour was easily turned out of the uterine cavity with its mucous covering entire. The cavity was drained by a tube into the vagina. The wound in the uterine wall was brought accurately together with catgut sutures, about three to the inch. The abdominal wound was closed with sutures in three layers as usual, the peritoneal and middle layers with catgut, and the skin with silkworm gut. The patient made an uninterrupted recovery. It would be noticed that this was not abdominal section and enucleation of fibroids in or on the uterine wall—a subject upon which various papers of great interest had been published.—Dr. E. O. CROFT and Dr. J. B. HELLIER made some remarks and Dr. BRAITHWAITE replied.

Mr. LAWFORD KNAGGS read a paper upon Volvulus in Association with Hernia. Four distinct groups could be recognised: (1) cases in which the neck of the volvulus was within the sac or close to the ring; (2) cases in which the hernial contents were implicated in the volvulus but where the neck and some of the affected coils lay within the abdomen; (3) cases in which the volvulus was produced within the abdomen upon the reduction of the hernia; and (4) cases in which a volvulus occurred within the abdomen from some predisposing condition more or less directly connected with a hernia. All these groups possessed features of much interest, but Mr. Knaggs only dealt with the second group in which the cases were of unusual gravity and importance.—Mr. H. LITTLEWOOD discussed the paper and Mr. KNAGGS replied.

The following cases and specimens were exhibited:—

Dr. EDWARD WARD: (1) Ruptured Spleen and Kidney; and (2) Ovarian Tumour.

Dr. A. G. BARRS: (1) Specimen of Amyotrophic Lateral Sclerosis; (2) Cancer of the Liver; and (3) a case of Hydropneumothorax with Typical Succussion Splash.

Mr. W. H. BROWN: (1) Mediastinal Growth; (2) Unusual Fracture of the Clavicle; and (3) Rupture of the Common Femoral. The patient in this case was shown.

Dr. J. B. HELLIER: Carcinomatous Uterus removed per vaginam.

Mr. H. LITTLEWOOD: (1) A case of Suprapubic Lithotomy with Prostatectomy in a patient, aged 70 years; (2) a case of Compound Depressed Fracture of the Skull in which the patient had been violent and delirious for a month; and (3) Tonsil and Glands removed for Squamous Epithelioma.

Dr. GORDON SHARP: Four cases illustrating the After-effects of Diphtheria.

Mr. B. G. A. MOYNIHAN: A case of Extensive Tuberculous Disease of the Ankle and Foot treated by Iodoform Injection.

Dr. E. F. TREVELYAN: Specimen of Hæmorrhage into the Pons causing sudden death.

Mr. MAYO ROBSON: (1) Adenoma of the Small Intestine causing Intestinal Obstruction; (2) Sarcoma of the Soleus Muscle; and (3) Tuberculous Kidney.

Mr. LAWFORD KNAGGS: Case of Erasion of the Ankle for Tuberculous Disease by Four Vertical Incisions (Clutton's Method).

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.—Salol in the Treatment of Small-pox.—Permanent Dislocation of the Patella.—Murder and Suicide by Cut Throat.

THE fourth ordinary meeting of this society was held on Jan. 17th, Mr. ALEXANDER MILLER, the President, being in the chair.

Dr. NORMAN WALKER showed a man suffering from Acne Varioliformis which had lasted for two years. The disease, as it has been described, extended into the hair as true acne very rarely did. The scarring was exactly like that seen after small-pox. The patient had no syphilitic lesions and though the condition had improved under the administration of iodide of potassium Dr. Walker did not think that that disease was due to syphilis.

Dr. C. W. MACGILLIVRAY showed a boy who had been Struck over the Left Parietal Bone by a piece of lead piping which had fallen from a height of about 30 feet. The wound was examined five hours after the injury and a piece of the left parietal bone of about the size of a small oyster-shell was found entirely loose in the wound; this was removed, leaving an area of about two and a half square inches of the dura mater exposed. The boy was never insensible and the wound healed perfectly without any febrile disturbance.

Dr. CHARLES BEGG communicated a paper on Clinical Experience with Salol in the Treatment of Small-pox. He narrated his experience of the disease in China and thought that an explanation of the value which salol had had in his hands might be of value in view of the late spread of the disease in England. Dr. Begg was not aware of any similar observations to his own. The following case led him to think of the use of salol in small-pox. A patient who suffered from cystitis was taking a drachm of the drug daily. This individual had previously suffered intensely from the bites of mosquitoes. When taking salol a slight mental depression showed itself and the man did not even notice the mosquitoes. He had hundreds of bites, yet none of these showed the least appearance of swelling, redness, or irritation. This led Dr. Begg to think that salol might be useful in other irritating skin affections and on trying the drug its anæsthetic action was confirmed. Dr. Begg did not think that the mental depression which salol produced had anything to do with this sedative action on the skin. The drug was next tried in cases of small-pox and was found to keep the patient free from all irritation. There was no desire to scratch the skin and so the danger to the eyes was greatly avoided. This freedom from cutaneous irritation allowed of the patient sleeping and consequently exhaustion was prevented. Salol also almost always prevented the vesicles from maturing into pustules. Nearly all vesicles ended as such. In one case, that of a European, who had only been once vaccinated in infancy, confluent small-pox occurred and only two groups of vesicles ended as pustules. In almost every case the lymph dried up and the eruption so ended. No dangerous effects from the use of the drug in daily doses of one drachm continued for a long period manifested themselves. The cases should be brought at an early period fully under the action of the drug, and when properly so treated little scarring resulted. The foul odour which small-pox patients exhibited was entirely masked by the fruity odour which the drug manifested during its elimination by the skin.—Dr. NORMAN WALKER stated that his experience in the treatment of skin diseases by salicine agreed with the observations of Dr. Begg and he thought that the absence of scarring was due to the non-formation of a hard scab and that the prevention of suppuration in the pocks accounted for this.

Mr. SHAW MCLAREN communicated a paper on Permanent Dislocation of the Patella. He said that the dislocation was a displacement of the patella outwards so that it lay even in extension generally to the outside of the median line, while in flexion it slipped outwards and backwards until it lay on the outer surface of the external condyle, its anterior surface being directed to a certain extent outwards. The gait was thus rendered most insecure and the patient frequently fell, and attacks of synovitis were not infrequent. Mr. McLaren agreed with Appel that the condition was really a congenital defect, a deformity of the external condyle and trochlea of the femur, though a fall might first call attention to the malformation. In most of the recorded cases it had been noted either (1) that the deformity was actually present at birth; (2) that the child learnt to walk at a late period or walked insecurely during later years; (3) that there was rickets; (4) or genu valgum; (5) or outward rotation of the leg; (6) or ill-developed patella; or (7) abnormal shape of the external condyle and patella fossa of the femur. A case which he had met with was briefly as follows. It was that of a woman, aged 19 years, who had never walked securely and did not really walk alone until the age of seven years. She could never run, was always falling, and had knock-knee on the left side. She had presented evidences of rickets in childhood. On the left side there was marked genu valgum, the leg being rotated outwards. When the knee was extended the patella lay to the outside of the normal position; when the joint was flexed it passed further and further out until it lay on the outer side of the external condyle. The fossa patellæ of the trochlear surface of the femur could be felt to be partially filled up on its outer side as if the external condyle projected into it, while the outer edge of that condyle seemed to be entirely wanting. Mr. McLaren related the notes of Appel's two cases and also several other cases which were not noted by him. The quadriceps, in passing from its origin to its insertion, formed an obtuse angle at the point of which the patella lay. During action the patella would be pulled outwards unless this were prevented by the prominence of the external condyle, which kept the patella in the middle line. If the fossa patellæ were too shallow or the ridge of the external condyle was not prominent enough the patella would lie dangerously far out on the trochlea. A slight accident or a severe contraction of the quadriceps was only necessary to shoot the patella off the front of the condyle altogether. In those cases where the condyle was markedly deficient the complete dislocation might exist from birth or very early life. In any case, the structures on the outer side of the patella contract eventually and prevent the bone retaining its proper position. As regards treatment, various methods which had been adopted by different operators were related. The method which Mr. Shaw McLaren adopted in his case consisted in liberating the patella by dividing on the outside whatever contracted structures prevented it from assuming its normal position and then mooring it there by sutures passed through its inner border. Four years after the operation the patella had retained its position slightly external to and higher up than normal, and the patient walked and went up and downstairs easily and could also now run. This method of treatment seemed rational and effective and in most cases ought to be successful. The severer operation of opening the joint and enlarging the groove for the patella might be necessary in some cases, whilst transplanting the ligamentum patellæ inwards should be reserved for those cases where there was a high degree of outward rotation of the leg.—The PRESIDENT, Dr. MACGILLIVRAY, and Mr. CAIRD having spoken, Mr. MCLAREN replied.

Dr. HARVEY LITTLEJOHN narrated an interesting case of Murder and Suicide by Cut Throat, showing how such cases ought to be investigated and the difficulties to be encountered in their elucidation.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Deciduoma Malignum.—Ulceration in the Female Urethra.

A MEETING of this section was held on Jan. 5th, Dr. A. V. MACAN, the President, being in the chair.

Dr. W. J. SMYLY read a paper on Deciduoma Malignum. Having reviewed the literature of the subject he said that observers were now almost unanimous in believing that this was a disease sufficiently distinct to merit separate consideration. They also agreed as to its clinical features, pathological appearances, and treatment; also as to its connexion with pregnancy, and differed only as to their views concerning its histogenesis. He inclined to Veit's opinion that the disease was a sarcoma, modified by pregnancy. He also described a case which had come under his own observation. The patient, a pluripara, was delivered of a hydatiform mole in December, 1898. She had repeated hæmorrhages until May 10th when she had so profuse a hæmorrhage that she was reduced to a condition of profound anæmia. The uterus was dilated and a quantity of material resembling placenta was removed which on microscopical examination proved to be deciduoma malignum. Putrefaction and septic fever followed with pulmonary symptoms and empyema preceding radical measures. She lingered two months and then died. There was no post-mortem examination. Dr. Smyly showed the microscopical specimens at the Edinburgh meeting of the British Medical Association, when they were pronounced by Dr. Sänger to be typical examples of the disease which he had described.—Dr. R. D. PUREFOY, Dr. SMITH, and the PRESIDENT discussed the case.

Dr. PUREFOY read a paper on a case illustrative of a rare form of Ulceration in the Female Urethra. He said that the close resemblance in aspect and clinical history between some forms of chronic syphilitic disease and others of a malignant nature had long been recognised—indeed, sometimes the effect of treatment by drugs must be observed before the differential diagnosis could be safely established. Especially was this observable in regions where cutaneous and mucous structures coalesced and hence the external female genitals, as might be expected, furnished some of the best illustrations of this fact. A young woman who recently was under treatment in the gynæcological wing of the Rotunda Hospital complained of pain and soreness in the vagina and on examination the following conditions were observed. The greater labia were of normal size and healthy. On the inner surface of the left nympha a circular excavation existed, the edges were sharp-cut and overhanging; the base, white cicatricial tissue. The entrance of the vaginal canal was closed by a morbid growth with nodulated surface of a deep red colour which on close examination proved to be an outgrowth hanging from the edge of an enormously dilated urethra; indeed, the lower third of this passage was so widened and distorted that considerable difficulty was experienced in passing a catheter into the bladder. Strange to say, the patient in spite of this did not suffer from incontinence of urine. In the vestibule and adjoining parts an indolent shallow ulceration was observed, alternating with patches of white cicatricial tissue marking its former course. In the writings of the late Dr. West cases closely resembling, if not identical with, the one under consideration were recorded. He said: "The affection has come six times under my observation—twice in married women who acknowledge to having suffered from venereal disease and four times in women of unchaste life, one of whom was at the time suffering from a secondary syphilitic eruption. The ulceration appears to begin at the orifice of the urethra, extending thence inwards towards the bladder, producing in its course a great widening of the canal and a patulous condition of its orifice, so that the finger-tip can easily enter it." Dr. Purefoy said that in its earlier stages this distressing affection admitted of some amelioration by local measures—the application, for instance, of oxide of zinc in the form of ointment, or lotion with liquor plumbi; and, even in the advanced stage, attended with widening of the urethra, the use of strong nitric acid, or the actual cautery, might bring about such cicatrisation and attendant contraction of the diseased parts that control of the bladder might be regained. Some facts in the history of his patient, as well as some scaly patches on the face and neck, afforded such presumptive evidence of a syphilitic taint that a combination of bichloride of mercury and iron in mixture was prescribed for her, and its use was followed by improvement. In many points these cases bore a close resemblance to that formidable disease of the female genitals first described in 1849 by M. Hugnier, and to which he gave the name "lupus hypertrophicus or perforans." This affection was very rare; medical literature did not afford records of more than about 40 cases in all. Illustrations of some of them would be found in Dr. McClintock's "Memoirs on Diseases of Women."—Dr. SMITH and the PRESIDENT discussed the paper.

Dr. PUREFOY showed a case of Ectopic Gestation removed by Vaginal Cœliotomy.

FORFARSHIRE MEDICAL ASSOCIATION.—A clinical evening of this association was held in University College, Dundee, on Jan. 10th, Dr. C. Templeman, the Vice-President, being in the chair.—Professor J. A. C. Kynoch showed a child from whom he had removed a Renal Sarcoma three years before by Laparo-nephrectomy. Six other cases of laparo-nephrectomy on children under two years of age had been reported as alive and well three years after operation. There was still considerable difference of opinion in regard to the pathology of these renal tumours. Although only 5 per cent. of all reported cases had recovered the chance of a cure ought to be offered.—Dr. R. C. Buist and Dr. C. McVicar also spoke.—Dr. A. McGillivray showed (1) a boy with Rupture of the Choroid and (2) a patient who after injury had suffered from a Dilatation of One Pupil which he was inclined to consider as due to irritation—an irritation mydriasis.—Dr. McVicar showed a patient with a large Cystic Swelling which extended from the anterior border of the sterno-mastoid to the middle line with branching processes under the same muscle and up into the floor of the mouth. The fluid was viscid and clear and when it escaped by the mouth had a sweetish taste. It appeared to be a bronchial cyst and was of interest as such cases had been known to assume an epitheliomatous character.—Dr. J. Gray showed for Professor McEwan specimens of (1) Fracture, Base of the Skull; (2) Epithelioma, Tongue; and (3) Limb from a case of Senile Gangrene.—Dr. Gray showed a cast of an Arm with Lipomata.—Professor Kynoch illustrated by a painting an unusual Pigmentation of the Central Linear Cicatrix as well as the Stitch Scars of a case of Ovariotomy which he had performed during pregnancy. A scar of two years' duration on the breast had remained unaffected. He asked whether the condition was due to the ovariotomy or to the delicate skin, and in relation to this mentioned that Bloxall had reported a case in which the scar left after removal of a dermoid had become pigmented during a subsequent pregnancy.—Dr. Buist had seen a like scar pigmentation during a pregnancy following immediately after the removal of one ovary.—Professor Kynoch showed a Multilocular Ovarian Cyst and remarked on the few adhesions present notwithstanding the fact that part of the cyst had been ruptured by an accident some time previously.—Professor Marshall and Dr. Buist added some comments.—Dr. McVicar showed (1) an Ovarian Cyst which in view of the clinical history and the naked-eye and microscopic appearance seemed to be an abscess of the ovary; and (2) a Vermiform Appendix with the Lumen practically Occluded.—Dr. Buist and Dr. Kynoch discussed some of the points raised.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Jan. 17th, Mr. W. Thorburn, the President, being in the chair.—Mr. F. A. Southam showed two specimens of Papilloma of the Bladder which had been removed by suprapubic cystotomy from male patients, aged 45 and 64 years respectively. In both cases the only symptom was a painless hæmaturia, in one instance continuous and in the other intermittent. The patients made a good recovery from the operation and in both instances the removal of the growth was followed by a complete cessation of the hæmaturia.—Dr. Warrington described the case of a man, aged 60 years, who had sufferedfrom Anæmia. His condition gradually got worse and he developed kyphosis of the vertebral column; spontaneous fracture of the ribs also occurred. The urine contained large quantities of the body known as albumose which was first described by Bence Jones in 1848. The necropsy showed that the ribs were remarkably affected, the bony substance being reduced in thickness to about that of a sheet of notepaper, while their lumen was filled with a reddish mass similar in appearance to splenic pulp. The sternum and vertebræ showed a similar condition; the substance present in the bones of the thorax also gave the reaction of albumose.—Dr. Craven Moore showed a series of specimens illustrating the various types of Lymphadenoma and briefly referred to their morbid relations.—Dr. W. E. Fothergill described examples of Exomphalos and Pseudo-anencephalus.—Other preparations were shown as Card Specimens.

HARVEIAN SOCIETY OF LONDON.—The annual meeting of this society was held on Jan. 18th.—Mr. Thomas Bryant was elected an honorary member of the society to fill the vacancy caused by the death of the late Sir James Paget.—The report of the council and the treasurer's statement were read and adopted.—The election by ballot of the officers for the ensuing year resulted as follows:—President: Dr. W. H. Lamb. Vice-Presidents: Mr. Peyton Beale, Dr. W. J. Gow, Mr. Alban Doran, and Dr. Winslow Hall. Treasurer: Mr. Edmund Roughton. Council: Mr. Buckstone Browne, Dr. H. A. Caley, Mr. Jackson Clarke, Dr. A. Eddowes, Dr. J. F. Goodhart, Dr. Leonard Guthrie, Mr. H. E. Juler, Dr. H. J. Macevoy, Mr. Sefton Sewill, Dr. G. A. Sutherland, Dr. Herbert Spencer, and Dr. Atwood Thorne.—The retiring President (Mr. H. E. Juler) delivered an address on the Value of the Observation of Eye Symptoms in relation to General Medicine and Surgery.—A vote of thanks to the retiring President for his address and for his services to the society was proposed in very genial terms by Mr. Henry Power and carried with acclamation.—Votes of thanks to the retiring Vice-President (Dr. Ernest Gee), to the Members of Council, and to the retiring Secretary, Dr. Leonard Guthrie, were proposed by Mr. Edward Bartlett and Dr. Sidney Phillips.—The meeting was followed by a conversazione which was very

largely attended. Instrumental music was provided by the string band of the Royal Horse Guards.

MANCHESTER MEDICAL SOCIETY.—The following gentlemen were elected office-bearers for the year 1900:—President: Dr. T. C. Railton. Vice-Presidents: Mr. W. Coates, Dr. A. Donald, Dr. W. Milligan, and Dr. R. Wild. Treasurer: Dr. C. E. Glascott. Secretary: Dr. E. S. Reynolds. Committee: Dr. W. H. Brazil, Dr. E. M. Brockbank, Dr. J. G. Clegg, Dr. J. J. Cox, Dr. T. Harris, Dr. M. P. Ledward, Dr. F. C. Moore, Dr. J. E. Platt, Dr. C. Skinner, Dr. G. Thomson, Dr. R. T. Williamson, and Mr. A. Wilson. Library Committee: Dr. T. N. Kelynack, Dr. A. Lea, and Mr. J. W. Smith. Auditors: Mr. J. H. Ray and Dr. W. K. Walls.

BRADFORD AND DISTRICT MEDICO-ETHICAL SOCIETY.—The annual general meeting of this society was held on Jan. 17th. The officers elected for the ensuing year were as follows:—President: Dr. J. H. Bell. Vice-President: Dr. D. Goyder. Honorary treasurer: Dr. F. K. March. Honorary secretaries: Dr. W. Horrocks and Dr. A. Manknell. Committee: Mr. I. Mossop, Dr. W. Parkinson, Dr. A. Bronner, Mr. J. Harrison, Mr. W. Handcock, and Dr. J. Metcalfe. Auditors: Dr. W. Arnold Evans and Dr. E. G. Peck.

Reviews and Notices of Books.

The Pathologist's Handbook: a Manual for the Post-mortem Room. By T. N. KELYNACK, M.D. Viet., M.R.C.P. Lond. 126 Illustrations. London: J. & A. Churchill. 1899. Pp. 186. Price 4*s.* 6*d.*

THIS is an excellent little book, although possibly its title conveys the idea that the work deals with more than it actually does, but, as Dr. Kelynack states in his preface, "My main object has been to indicate methods. Reference to special lesions has, to a very great extent, been omitted. For descriptions of these the student will naturally refer to his text-books on Morbid Anatomy." Dr. Kelynack also claims to have merely "attempted to furnish a concise guide for students acting as clerks in the post-mortem room and a suggestive manual for junior practitioners." These excerpts from the preface give a very fair idea both of what the book is and of what it is not.

Chapter II., "General Considerations," deals in a very clear and sensible manner with such subjects as the prevention of post-mortem wounds, the cleansing of the hands, and the question of permission from the relatives. With regard to this latter point Dr. Kelynack remarks: "If what may be termed the æsthetic or sentimental side of the question were more generally attended to it is very probable the public would soon show less repugnance to the holding of pathological examinations. The care of a mortuary is a matter of real importance. Every hospital should have a mortuary chapel with suitable arrangements for the viewing of the corpse by the friends." In this we quite agree, and the strictures upon the condition of mortuaries apply not only to those attached to hospitals but to many parochial buildings, though there are honourable exceptions, notably in the case of Westminster, Chelsea, and Kensington. Dr. Kelynack gives a caution as to the taking of notes in a post-mortem examination for medico-legal purposes. These notes, he says, should indicate pathological facts and give full descriptions of lesions observed, but no opinions or inferences should be expressed. This is an important point which is often neglected. Another practice to which Dr. Kelynack alludes is noteworthy. "In cases likely to lead to litigation I have generally found it wise to ask all the medical men present to sign the report in evidence of their agreement with the facts therein stated. Their opinion as to the cause, nature, and general bearing of the case is thereby not interfered with, and much of the quibbling as to the facts which tend to make medical men ridiculous in the eyes of the public may be avoided." It is always as well in a medico-legal case for a second medical man to be present, and if this precaution were taken such lamentable errors as occurred in a recent case would never happen.

Chapter III. deals with Instruments, and Chapter IV. with the External Examination. The latter chapter contains a useful table indicating the differences between post-mortem staining and ante-mortem contusions.

Chapter V. contains the consideration of the Internal Examination, and here again a useful note of warning is sounded against the confounding of post-mortem changes with true morbid conditions.

Chapter VI. deals with the Thorax and Neck, Chapter VII. with the Abdomen, and Chapter VIII. with the Head and Spine. Chapter IX. deals with Special Examinations, including a note upon examinations conducted in private houses, and Chapter X. is concerned with medico-legal matters, such as exhumation, poisoning cases, death certificates, inquests, and the like.

Chapter XI., entitled Miscellaneous Considerations, treats of the "restitution" of the body, post-mortem records, and one or two other points. There is only one point on which we would make a suggestion and that is that in a future edition the operator should be advised, if the costal cartilages are calcified, to fold the soft tissue of the chest wall over them before putting his hands into the thorax. Such a procedure will save many a troublesome scratch. It is a small point but one which we have often seen neglected and Dr. Kelynack does not mention it. The book certainly on the whole is worthy of great praise.

Lehmann's Medicinische Hand Atlanten, Band IX. *Atlas of the Nervous System in Health and in Disease, exhibiting the Groundwork of its Anatomy, Pathology, and Therapeutics.* By Dr. CHRISTFRIED JAKOB, of the University of Buenos Ayres, with a Preface by Professor Dr. A. von STRUMPELL. Second Edition, thoroughly revised, with 84 Plates and 208 pages of Letterpress. München: J. J. Lehmann. 1900. Small octavo. Price 14*s.*

THOSE who purchase this work must not expect to obtain a series of plates giving the distribution of the cranial or spinal nerves. It does not contain any account of the fifth or seventh nerves, nor are there any drawings of the branches of the brachial or lumbar plexus, but to those who know how to use it it will prove, we are assured, a very valuable treatise and book of reference. It commences with ten excellent coloured plates of the brain exhibiting its superior, lateral, median, and inferior aspects, the appearances presented on transverse sections of the brain at successive planes, and different views of the cerebellum. The plates are not spoiled by figures, lines, or letterpress, but an outline drawing is placed on the opposite page, which is lettered, and there is a page of references. The next plates show the relation of the white and grey substances on section of the crus cerebri and medulla oblongata and in photographs of the cord in the cervical and lumbar regions. Two plates are devoted to the embryology of the nervous system. The glia and ganglion cells and the production of the neurons as processes from the cells are next depicted. Then follow a drawing showing the arrangement of the cells in the cortex cerebri, a plate with the disposition of the convolutions, others showing the position of the nuclei in the medulla oblongata, and the structure of nerve fibres and their appearances in health and disease. The twenty-sixth plate exhibits in different colours the columns of the cord. The general arrangement of the cerebro-spinal nerves is next illustrated. Many plates follow with for the most part two and three figures on each plate, which are coloured and show the arrangement of the fibres in different parts of the brain, medulla oblongata, and spinal cord, as in sections made through the corpus callosum, the corpus striatum, optic

thalamus, and olive. Anyone who will study these drawings carefully will make himself master of the structure of the brain and the course of the fibres in the spinal cord in a way that would require many dissections and the consumption of much time to accomplish. The last 20 plates are chiefly occupied with illustrations of the effects of disease on the nerves and nerve-centres, such, for example, as neuritis multiplex, tabes dorsalis, syringomyelia, and various forms of ascending and descending degeneration. There are between two and three hundred drawings altogether, and they are very instructive. In the text which accompanies the plates no attempt is made to give a description of the nervous system as a whole, but those who are able to read German will find that the author has been able to condense into a small space much useful information in regard to the functions of the several parts of the nerve centres and the effects of disease. The work is very well produced, and considering the number and excellence of the illustrations its cost is surprisingly small.

Recherches Cliniques et Thérapeutiques sur l'Epilepsie, l'Hystérie, et l'Idiotie. Par BOURNEVILLE, avec la collaboration de MM. CESTAN, CHAPOTIN, KATZ, NOIR, PHILIPPE, SEBILLEAU, et BOYER. (*Clinical and Therapeutical Researches on Epilepsy, Hysteria, and Idiocy.*) Vol. XIX. Large 8vo. Paris: Aux Bureaux du Progrès Médical et Félix Alcan. 1899. Pp. 236, with 13 Figures in the text, and 13 Plates. Price 5 francs.

THIS volume contains an account of the administration of, and arrangements at, the Bicêtre for the care and treatment of epileptic and defective children, and this is followed by chapters on clinical and pathological observations carried out at the institution. An excellent account is given of the classification of patients—various types of idiots, imbeciles, and "defectives"—for purposes of instruction and training. Thus at the end of 1898 there were 462 children at the institution, 45 of these being classed as non-insane epileptics. Gymnastics, fencing, dancing, &c., are taught to suitable patients, and school classes of various grades are available for teaching and manual training. During the year 74 patients were admitted, 19 died, and 54 were discharged. Among the deaths eight were attributed to epilepsy, five to enteric fever, and four to tuberculosis. At the Fondation Vallée, a tributary institution attached to the above, there were at the end of 1898 189 patients (epileptic, imbecile, and hysterical girls). The admissions amounted to 62, and there were 13 deaths, and 44 discharges and transfers. Tuberculosis seems to have been the cause of seven deaths. Dr. Bourneville emphasises the importance of the provision of special classes for feeble-minded children in connexion with the primary schools in Paris, and points to satisfactory results already achieved in England, Switzerland, and Belgium.

The clinical and pathological section teems with useful information. Chorea and its treatment by bromide of camphor form the subject of a very instructive article, and very good results are chronicled of this mode of treatment. Careful accounts of hydrocephalic idiocy and imbecility with athetosis are given. Chronic meningitis with idiocy, mania of adolescence, alcoholism and its treatment in children, febrile diseases and their treatment in idiots and imbeciles, and a valuable study of an epidemic of typhoid fever, all find appropriate mention and description.

A number of chapters of exceptional interest deal with the hereditary conditions and antecedents of patients, a subject which the French school have cultivated with especially good results. A graphic account of a case of adolescent mania with nymphomania cured after seven months' treatment and one of a boy aged 13 years, a juvenile drunkard of shockingly depraved morale, arrest attention; the latter patient having improved remarkably under treatment at the "Institut Médico-pédagogique." Several excellent plates and photographs illustrate the work and add to its usefulness; they deal with such subjects as hydrocephalic and meningitic idiocy, and cerebral sclerosis, and are well executed. The volume is a worthy continuation of the series, and will be read with interest, especially by those who are concerned with the cerebral and mental affections of children, including cerebral pathology, or are attached to institutions having the care and treatment of such patients.

LIBRARY TABLE.

Dermato-histologische Technik. By Dr. MAX JOSEPH (Berlin) and Dr. GEORG LOEWENBACH (Vienna). Berlin: L. Marcus. 1900. Price 3 marks.—This is a laboratory manual of 110 pages for those who desire to study the histology of the skin and its diseases. The best idea of its scope may be gathered from the headings of its chapters: (1) Investigation of Skin in its Fresh Condition (*a*) in Sections, (*b*) not in Sections; (2) Ditto Preserved, Fixing and Hardening; (3) Embedding; (4) Cutting and Handling Sections; (5) Staining in General; (6) Special Staining; (7) Parasites; (8) Special Staining of Epidermic Structures; (9) Hairs; (10) Nails; (11) Coil and Sebaceous Glands; and (12) Special Stains for Components of Cutis. The directions are concise and the authors being well-known workers in this field their advice may be relied on, while the wealth of formulæ for the various media required makes the work a manual valuable to every student of this branch.

A Pocket Medical Dictionary. By W. A. NEWMAN DORLAND, A.M., M.D. London: The Rebman Publishing Co. Philadelphia: W. B. Saunders. Pp. 518. Price 10*s.*—This is a very handy and, so far as we have been able to test it, a very complete and accurate little book. It is printed on thin but opaque paper in clear type and though comprising over 500 pages is of a convenient size for the pocket. Although every practitioner should possess Dr. George Gould's incomparable dictionary it is a book which is too bulky to carry about and for this purpose Dr. Dorland's modest volume is admirably suited. There are several useful tables, such as those of the muscles, arteries, and nerves. The only point with which we are inclined to find fault is the phonetic representation of the pronunciation of French words. Thus, "abouchment," which surely should be "débouchment," is represented phonetically by "ah-boosh-maw," with an acute accent after the "w." The nasal French "n," is certainly not easy to represent phonetically, but we cannot think that the method illustrated above will aid the student.

Who's Who? for 1900. London: Adam and Charles Black. Pp. 1092. Price 3*s.* 6*d.*—This useful work has increased in size by some 80 pages since its last appearance. The general information is of great value, and in most cases, being autobiographical, can be relied upon. We expect that there are few newspaper offices unprovided with a copy of this book of reference, and its influence can be traced in one gloomy direction with great regularity—we refer to the accurate nature of the obituary notices of comparatively unimportant men in the general press. We notice that a list of the chief naval and military medical officers which appeared last year has been omitted this year, which we think is a rather untimely variation in contents.

JOURNALS.

The Journal of Anatomy and Physiology. Conducted by Sir WILLIAM TURNER, D. J. CUNNINGHAM, F.R.S., O. H. HUNTINGTON, M.D., A. MACALISTER, F.R.S., and J. G.

M'KENDRICK, F.R.S. Vol. xxxiv., Part II. London: Charles Griffin and Co., Limited. January, 1900. Price 6s.—The articles contained in this number of the *Journal of Anatomy and Physiology* are:—1. The Stomach and Pylorus, giving the results of an investigation undertaken with a view to determine the actual movements of the stomach during the process of distension, by Richard J. A. Berry, M.D., F.R.S. Edin., and John Crawford, M.B. Edin., with four plates. The authors show that the length of the stomach bears certain very definite relations to its transverse diameter, the exact ratio being as 1000 to 463; also that the shape of the pylorus is practically always oval, the longest axis being most frequently directed from above downwards and backwards, and that the stomach of the female is more tubular than that of the male. 2. Duplicity of the Cervix Uteri in Trichecus and Otaria, by Professor Cleland, F.R.S., with a plate. 3. On the Vitality of the Ova and Spermatozoa of Certain Animals, by James F. Gemmill, M.B. Glasg. He shows that the life of an unfertilised sea-urchin egg in sea water is comparatively short, certainly under 24 and probably under 12 hours. The eggs of the limpet may remain fertilisable up to 40 hours after extrusion. The vitality of spermatozoa of the sea-urchin may endure for 72 hours. 4. The Form of the Empty Bladder and its connexions with the Peritoneum, together with a Note on the Form of the Prostate, by A. Francis Dixon, M.B. Dub., with three plates. A valuable contribution to a field of anatomy that has been well worked over. 5. On the Structure and Functions of Hæmolymph Glands, by W. B. Drummond, M.B. Edin., with three plates, an interesting article on a subject that has received but little attention at the hands of histologists. 6. Note on the presence of Ciliated Cells in the Human Adult Kidney, by E. Wace Carlier, M.D. Edin. Ciliated cells are found living in the proximal and distal convoluted tubes and the spiral tubes. 7. A Note on the Thymus Gland in the Koala (Phascolarctos cinereus), by Johnson Symington, M.D. Edin., with two plates. 8. Symmetrical Perforations of the Parietal Bones, by A. M. Paterson, M.D. Edin., and F. T. Lovegrove, M.R.C.S. Eng., with four plates. 9. The Causes of the Entrance of Oxygen into the Blood in the Lungs, by J. J. Charles, M.D. Irel. 10. The Topography of the Facial Nerve in its Relation to Mastoid Operations, by Robert Dwyer Joyce, F.R.C.S. Irel. 11. Craniometric Observations in the Post-mortem Room, by David Waterston, M.B. Edin. 12. Ninth Report of the Committee of Collective Investigation of the Anatomical Society of Great Britain for the Year 1898-99; reported by F. G. Parsons. This report has reference to the circumflex (femoris) arteries and the perforating arteries. 13. An Australian Skull with three Supernumerary Upper Molar Teeth, by Professor Sir William Turner. 14. Archæologia Anatomica, by E. Barclay Smith, M.D. Cantab. The subject of the article is John Halle, a sixteenth-century anatomist. Lastly, the Proceedings of the Anatomical Society of Great Britain and Ireland.

Revue d'Hygiène et de Police Sanitaire. Tome xxi., No. 12, Decembre, 1899. Paris: Masson et Cie.—The interest excited during recent years in the subject of contamination of oysters and the evil results which may accrue therefrom has prompted the French Government to undertake an extensive inquiry into the topographical relation of the oyster layings on the French littoral. Dr. Mosny has been entrusted with the investigation, and the bulk of the current number of the *Revue d'Hygiène* is taken up with the first portion of Dr. Mosny's report, which is confined in the main to a historical account of the chief events connected with mussel and oyster poisoning of one or another variety. The author of the report apparently sees little difficulty in effecting the closure of certain layings, the removal to another site of others, and the suppression of the sources of pollution in others. The result of Dr. Mosny's topographical investigations, which will presumably appear in the next number of the *Revue d'Hygiène*, will be of interest to English consumers of French oysters, although in the main French oysters are introduced into this country when quite young.

The Journal of State Medicine. Vol. viii., No. 1. January, 1900. London: Baillière, Tindall, and Cox. Price 2s.—Dr. W. R. Smith's first Harben lecture on Diphtheria is published in full in this number. He treats of the history and distribution of the disease in space and time and of the conditions with which it is at times associated. He traces the varying degrees of diphtheria incidence upon the several counties and groups of counties in England and Wales during several decades, and contrasts it with the behaviour of measles and scarlet fever. The tables and maps which appeared in Dr. Smith's report to the London School Board in 1896 have been brought up to date, and additional matter with regard to the bacteriology of the disease has been introduced. Dr. William Thomson's paper on the Pollution of the Atmosphere of Large Towns which was read at the Blackpool Congress of the Royal Institute of Public Health is embodied in the volume before us, as also is Mr. Casmey's paper on the Ventilation of Industrial Buildings.

New Inventions.

AN IMPROVED EXPLORING SYRINGE.

IN designing this syringe an attempt has been made to overcome an inconvenience which is too often experienced when using the ordinary apparatus—viz., the blocking of the needle, either during its insertion or by particles in the fluid which it is intended to withdraw. It will be seen from the sketch that the construction consists of a hollow needle D, fitted with a pointed trocar which passes through an air-tight stuffing box C, and is provided with a head A. This part of the apparatus, which is similar to that supplied with some aspirators, is fixed parallel to an ordinary cylinder and piston, the needle D having a clear way through to the lower end of the cylinder. When it is required to use the syringe for exploring purposes both the trocar and the piston are pushed right in by means of the heads A and B respectively. The needle is then inserted and the trocar pulled out a few inches by means of the head A so as to leave the needle open to the cylinder. The piston can now be gradually drawn out. If when the piston is part way up the cylinder the needle should become stopped up the trocar can be pushed down to clean it. The apparatus is so designed that it can be taken to pieces for sterilising and cleaning. Messrs. Mayer and Meltzer of Great Portland-street are the makers.

Portsmouth. CHRISTOPHER MAYHEW.

THE LANCET.

LONDON: SATURDAY, JANUARY 27, 1900.

THE second and final report of Lord LLANDAFF'S Commission on the London Water-Supply has just been issued. The Commissioners were appointed as long ago as May, 1897, and, as our readers may remember, they held no less than 64 public sittings, at which an enormous amount of evidence was given by a large number of witnesses, full reports of which appeared at the time in our columns. The subjects on which the Commissioners were asked to report were, briefly, whether it was advisable from a financial point of view that the undertakings of the metropolitan water companies should be purchased, and if so, whether by one authority or by several authorities; secondly, if such purchase were not made, whether any additional powers of control should be vested in local or other authorities. A third point on which the Commissioners were asked to give an opinion was as to whether any system of intercommunication between the mains of the existing metropolitan water companies was practicable and advisable. It will be remembered that in consequence of a failure on the part of the East London Water Company to supply their customers adequately during the summer of 1897 it became a pressing matter to see whether anything could be done to prevent such a catastrophe from happening during the next summer. The Commissioners were therefore asked to give their immediate attention to this subject, and they proceeded to receive evidence bearing on this matter from the engineers of the metropolitan water companies. No less than three schemes were submitted and the Commissioners in their first report advised that some temporary measures should be taken by which a water famine in the East-end of the metropolis might probably be prevented. We dealt fully with this first report at the time of its issue and were glad to be able to record that the Government acted up to their duties and quickly passed a measure which obviated a water famine in East London. The Bill by which this work was to be made possible was opposed by the London County Council—a fact which we point out because the different actions of the London County Council in regard to the work of reforming the methods of the water-supply of London must be borne in mind by all who would understand an intricate subject.

The Commissioners, having issued a report on one of the subjects of their inquiry, returned to the other issues which were presented to them. They completed the reception of evidence and heard counsel's speeches and have now finally issued a report on the matters in their reference. The report is an exhaustive one. The Commissioners have come to the following conclusions: (1) that it is expedient that the undertakings of the metropolitan water companies should be purchased; (2) that it is advisable that the purchase should not be effected by the London County Council, but that (3) a Water Board should be established to purchase and to control the undertakings necessary for the supply of London with water; (4) that for some years the basins of the Thames and Lee will afford sufficient water for the needs of the area to be supplied; and (5) that it would cost less to put up the necessary reservoirs for the storage of Thames water than it would cost to obtain a new supply from Wales. The London County Council will doubtless not agree with this report, but in the face of it it will be necessary for them to consider whether they are justified in the interests of the London ratepayers in proceeding with the Bill which they are promoting to obtain water from Wales. For many London ratepayers are doubly interested in the procedure of the Council. Not only do the costs incurred by the Council with regard to their own Bills fall on the ratepayers of London as a whole, but some of the expenses incurred by the companies practically come out of the pockets of some of the London water consumers. In these circumstances the London County Council should, we think, in the interests of the London ratepayers, forbear from unnecessary Parliamentary expenditure. There are many ways in which the London County Council can be useful to the water consumers of London without straining for the absolute control which the Commissioners advise Parliament not to confer upon them. They have not always used the powers which are already in their possession for the protection of water consumers. We trust that they will now find time to attend to this work and we may be able to point out various directions in which their energy can be usefully expended. It may be urged, from a medical point of view, that the body having charge of the public health of the metropolis ought to have charge of the water-supply. But the London County Council must justify their ability to discharge the enormous trust that would thus be confided to them.

We are by no means inclined to agree in its entirety with Lord LLANDAFF'S report. We cannot refrain from noticing the fact that the Commissioners have expressed an opinion with regard to the amount of water which the basins of the Thames and Lee supply and are likely to yield. We are strongly of opinion that the Commissioners would have done a greater service to London water consumers had they collected accurate information with regard to the amount of water which the area can produce. As it is, they have relied on the authority of Lord BALFOUR'S previous report—a report which it has been contended by Sir JOHN EVANS and other competent authorities has already proved fallacious.

THE electorate of the University of London will do well to disregard all the partisans who try to make them believe that there is nothing worthy or distinctive in university representation, and that in the exercise of their academic franchise in the course of a few weeks they are discharging a mere humdrum political duty. The legislature of the country has given to the electorates of universities a special representation over and above that which they enjoy as citizens. The natural inference is that the privilege of selecting a university candidate or representative is special. At any rate it is

additional to that enjoyed by the elector in his non-academic capacity. And the legislature has certainly meant him to bring to the task of selecting a candidate and supporting him more than the conventional set of considerations which influence the ordinary voter, as well as to encourage the choice of men as Parliamentary candidates who would not be selected by other constituencies. In saying this we in no wise disparage the ordinary constituencies and the average elector. Neither the tradition of this journal nor the spirit of the age permits us to do so. If we have representatives who do not always do what we think they should for the health and welfare of the people—which are the real end and purpose of all legislation—we have others who spare no pains towards these ends. Our legislators will compare favourably with those of other countries, and the choice of representatives by large sections of the people secures one inestimable advantage—the free discussion of all subjects both by the constituencies and by Parliament. Mistakes are made and crude and ill-formed judgments are expressed sometimes even in Acts of Parliament. But these faults are always liable to exposure and correction. All classes are made to see their fallibility and thus learn to respect the opinions of others. The more informed are the first to recognise the honesty and fairness of those from whom they differ and whose information they may know to be inferior to their own. The less informed are not slow to perceive the force of facts when made plain to them by those who know.

The Constitution that gives all classes the chance of having their views expressed in Parliament surely expects the special representation of universities to facilitate the election of men of special knowledge or authority. We believe that if the adversaries of such representation—and there are not a few—ever succeed in abolishing the university franchise it will be the fault of members of universities themselves in not protecting their privilege by selecting as representatives their most capable and distinguished men. We do not mean that the elector of a university representative is to ignore or go against his political principles in the use of his academic franchise, but we mean that he is to do his best to secure for his university an ideal representative whose qualities shall be distinctive, whose reputation shall be such as to secure deference, and whose support shall count in the House for more than his mere individual vote. We do not expect infallibility in such a member any more than in the ordinary member. Still less do we expect any assumption of airs of superiority. The ideal university member should have a record which must secure his being heard and which is likely to conciliate his hearers. His political past need not be pronounced, but there should be something in his history and in his *personnel* which would be a guarantee for liberality of sentiment in the estimation of political forces and questions. In matters of science and education it is important that he should be clear and in line with the best opinion of his time.

The University of London is about to assume the character of a teaching university and all expect for it as a teaching centre the eminence which hitherto it has well maintained as an examining body. But just at this juncture it is immensely important that no mistake should be made in the election of a representative of the University in Parliament. Somewhat undue haste has been used in putting forward candidates who, with great merits, yet do not possess the ideal qualities; but we have learned with great pleasure that Sir MICHAEL FOSTER has now allowed himself to be nominated. We have no hesitation in saying that we think his election ought to follow as a matter of course. It may not so turn out, for there are parties within this particular constituency over and above the ordinary political divisions everywhere to be found; but we are clear that Sir MICHAEL FOSTER is exactly the man who ought to sit in Parliament as a university representative. He is a candidate whose name and work and writings stand for much in the world of science and of educational literature. He speaks humorously, robustly, and well. He is secretary of the Royal Society. He is said to be Conservative, but he can have no Conservatism inconsistent with truth, which he loves, whether in politics, science, or morals.

THE discussion of medical relief for those who cannot afford to pay affords a fertile subject for controversial pens. In a country like England where so much is left to the free efforts of individuals or irregular collections of individuals, where the finger of the State is withheld, so to speak, from many a pie into which on the continent it would be pushed without dispute—in such a country it is perfectly natural that medical charity dispensed in a hundred different ways should be subjected to the free disussion of a thousand different people who for one reason or another interest themselves particularly in the matter. Such discussion is not only natural and in the circumstances unavoidable but also for the most part beneficial. It would, no doubt, be more useful still if the various critics of our system (or lack of system) of hospitals, infirmaries, and dispensaries, were to confine themselves to those particular branches of the subject with which they have had special experience. In this respect it is the lay critic who is more often at fault than the medical writer, and an article entitled "Hospital Chaos" in the current number of the *National Review* affords an illustration of this regrettable lack of discretion. The writer has collected much information upon the disposition and administration of hospitals and other places of medical charity in this and other countries and she contributes weighty arguments towards her attack upon our arrangements in England, but she seriously jeopardises the value of her opinions when she introduces discursive and fragmentary criticisms upon subjects of such purely medical and scientific interest as serum-therapy and Coley's fluid. Hers is a case of rushing in—an unguided mortal—where the angel of scientific knowledge still fears to tread save with the most wary steps. In short, when Miss MORTEN descants rashly and loosely of the uses of the "stale blood of diseased horses," which possibly she imagines to be an allied product to Coley's fluid, and under the title of "professionalism" discusses with fervour and assurance the subjects of "experiment" and "empiricism," she comes near to destroying the value of the rest of her words.

Miss MORTEN is an opponent of the voluntary system

of medical charity and argues in favour of the municipalisation or of the State control of hospitals. With very much of what she writes most medical men will cordially agree, and in fact similar opinions have been promulgated often enough in the columns of THE LANCET, where, as is well known, we have never advocated the establishment of State hospitals. Nobody doubts that the foundation of numerous small hospitals may lead to the deception of the public who may be induced to subscribe to undertakings apparently of public benefit which are really more in the nature of schemes for the private emolument of a few medical men. Again, Miss MORTEN puts her finger upon a weak spot when she describes the lack of coöperation existing between the various London hospitals and the difficulties besetting a patient who, finding no room in one, wishes to seek admission into another. In Paris, for instance, Miss MORTEN points out how the State control and consequent coöperation of the hospitals leads to the saving of much time, inconvenience, and even danger, ambulances having full information as to where there are empty beds. Here the writer touches upon defects existing particularly in London to which THE LANCET has already more than once given close attention. Similarly we can only acquiesce in her strictures upon the very deficient provision for hospital patients south of the Thames as compared with the comparatively excessive supply of accommodation in a small area of the west and south-west of London within which a large proportion of our general hospitals have been located.

Although we agree with many of Miss MORTEN'S opinions that are derogatory to our present hospital arrangements and would support her condemnation of many small special institutions, yet we cannot accept her remedy as either desirable or as in the least likely to be brought to bear upon the management of medical charity in this country. State control—or at least municiplisation—is the reform that she suggests. Now, hospitals and similar institutions exist primarily, as Miss MORTEN insists, for the welfare of their patients, and our judgment as to the success with which they are administered should be given to some extent in accordance with the satisfaction that we find among the patients. Patients may not always know what is best for their pathological conditions, but they do know when they are comfortable and well cared for. What, then, do we find if we compare hospital patients as a class in the towns of Germany and France, where there is complete State or municipal control, with members of the same class in our own towns? Is the Berlin hospital patient more ready than his London congener to enter hospital? The exact reverse is the case. Is he happier there or in receipt of greater skill or closer attention? Again the answer is, No. We have been very much deceived by our personal experiences if the hospital patient in England is not better off in all respects than the subject of medical charity in institutions where State control is paramount and where the opportunities for voluntary and individual effort are entirely obviated. The remedy for most of our hospital abuses lies not in the invocation of State or municipal aid, but in the enlightenment of public opinion and the awakening of the public conscience as to what class of person is the fit recipient of medical charity; and in the determination of the whole body of medical pr tioners to work together for the discouragement hospital abuse in all forms.

THE paper which we published in THE LANCET o Jan. 20th, "On the Results which have been Obtained by the Anti-typhoid Inoculations," by Professor A. E. WRIGHT of the Army Medical School, Netley, is certain to have been read with an unusual amount of interest, more especially as this prophylactic measure is at present being submitted to most critical trial amongst our troops on active service in South Africa. We trust, by the way, that the medical officers in charge of our men will find time amongst their many other duties to make records of cases of typhoid fever occurring amongst inoculated and uninoculated men respectively, together with the mortality and severity of the cases. Such observations will be of the first value.

On Sept. 19th, 1896, Professor WRIGHT, in a paper in THE LANCET dealing with the Relation of Serous Hæmorrhage to Certain Conditions of Defective Coagulability of the Blood, published his first experiments in what he termed "typhoid vaccination." On Jan. 30th, 1897, a paper appeared in the *British Medical Journal* by Professor WRIGHT and Surgeon-Major D. SEMPLE, entitled "Remarks on Vaccination against Typhoid Fever," in which it was pointed out that the object of all vaccination processes is, firstly, to achieve a degree of immunity which shall be equal to, or greater than, that which accrues to a patient who undergoes and recovers from an actual attack of the disease; and, secondly, to achieve that immunity without any risk to life or health. The first of these objects, the authors proceeded to state, can, as far as is known, only be satisfactorily accomplished by inoculating the patient with the micro-organisms (or the products of the micro-organisms) of the particular disease. The second object can be carried out in several ways. The patient may be inoculated with micro-organisms which have lost their virulence for man by being passed through a whole series of appropriately chosen animals; or, as in the Pasteurian method of vaccinating against anthrax, artificially attenuated micro-organisms may be employed in the inoculations; or, lastly, the patient may be inoculated with measured quantities of dead, but still poisonous, micro-organisms. The advantages claimed for the last-named method are that there is absolutely no risk of producing the actual disease—in the case that we are considering, typhoid fever—by the inoculations; secondly, that the vaccines may be handled without incurring any risk of disseminating the germs of the disease—a matter of the greatest importance when it is considered under what conditions the inoculation of troops may have to take place; and, thirdly, that dead vaccines are probably less subject to undergo alterations in their strength than living vaccines. With reference to the second of the above objects of vaccination—namely, that there should be no risk to life or health—we may merely say that a considerable experience has shown that but little inconvenience results from anti-typhoid inoculation. The men inoculated suffer slight pain and tenderness on the site of inoculation and there is fever and general

malaise lasting from a few hours to two or three days, rarely longer, when all of the symptoms subside.

The points which we now will consider, however, are the results which have been obtained, as shown by Professor WRIGHT'S last contribution. We fear that we cannot speak in enthusiastic terms of the statistics he has been able to quote, as a much larger number of cases will be required before any definite conclusion can be arrived at. But at the same time the results as shown in the table on page 152 of our issue last week are distinctly encouraging, quite sufficiently so to justify the medical officers in strongly advising officers and men to submit to the operation, and, as we believe has been often the case, in setting the example by themselves submitting to be vaccinated. The actual figures show that altogether 11,295 men were under observation, of whom 2835 had been inoculated and 8460 had not. The percentage of cases of typhoid fever amongst the uninoculated was 2·5, and amongst the inoculated 0·95, a difference sufficiently great to warrant further extensive trials taking place. With regard to the mortality the results are not so marked. Amongst the uninoculated the percentage of deaths was 0·34, and amongst the inoculated 0·2. We agree, therefore, with Professor WRIGHT that a certain measure of protection seems to have been conferred by the inoculation of the quantities of dead typhoid culture, and when his remarks on the conditions under which the inoculations were carried out are considered this conviction becomes intensified. For instance, Professor WRIGHT points out that the inoculated men were, taken as a whole, men who were much more liable to contract typhoid fever than the uninoculated men, for the inoculated consisted to a large, and sometimes to a preponderating, extent of young men who had only recently come out to India, while the uninoculated consisted mainly of older and more seasoned—in other words, of less susceptible—individuals. Read in the light of the above facts it is suggested that many of the results appear under a more favourable aspect than that which they present on a mere inspection of the figures given in the table. Professor WRIGHT further urges that it must be borne in mind in connexion with certain of the figures which he gives that the inoculations were sometimes undertaken in the actual presence of a typhoid fever epidemic. In conformity with this fact it was only to be expected that some of the inoculated would prove to have been incubating typhoid fever at the time of the inoculation, and in certain instances this turned out to be so. These cases are distinguished by italics in the table, and they have not been reckoned in the general summary of cases where the disease is known to have been contracted subsequently to inoculation. Professor WRIGHT points out that the results given in the table apply to men as distinguished from officers; as to the latter, no accurate statistical materials are available. It is satisfactory to learn, however, that among a number of inoculated officers who, counting only the subalterns, must now amount to several hundreds, there have been, so far as Professor WRIGHT has been able to ascertain, only five cases of enteric fever.

It is an old, but unfortunately only too true, maxim that in war many more men succumb to disease than to bullets. Typhoid fever has hitherto been the most prominent factor in increasing the death-roll of British soldiers in peace or war, and if a prophylactic measure can be found that even in some way tends to diminish the risk of infection without damaging the general health of the inoculated it should undoubtedly be employed as largely as is possible. The results so far cannot be said to be more than encouraging, hence the importance of careful observation in the present campaign is very great. Typhoid fever is so prevalent in many of our foreign possessions where large numbers of British troops have to be stationed that if the anti-typhoid inoculations should prove to be of use the discovery would be one of the most valuable to our Imperial interests that has been made during the present century. In order that the immunity conferred by the inoculation should be of full value to those seeking protection it is necessary that the effects should last for a considerable period. On this point we have as yet little information. Mr. A. G. R. FOULERTON[1] had the opportunity of examining the blood of nine people who had been vaccinated two years previously at the Kent County Asylum at Barming Heath. It was found that in four cases out of nine a definite agglutinative reaction was obtained after an interval of two years. These numbers are small, but they would tend to show that the benefits obtained are prolonged for some time. Further investigations must be made before definite results can be arrived at.

Annotations.

"Ne quid nimis."

THE WAR AND THE NATIONAL TEMPER.

WHATEVER condemnation and satire may have been heaped deservedly, and undeservedly, on our generals by foreign critics—who, as a rule, have little knowledge and no experience of South Africa, our enemy, or the circumstances with which we are dealing—these critics are, we believe, agreed that the British nation and the units who compose it have taken their reverses with fortitude and faced the changes in the situation with courage and without excitement. At the same time, they no doubt are aware—and we do not wish them to think otherwise—that the nation is feeling deeply the checks it has received, and has resolved sternly to inquire into the causes of them when the right time comes. We are, on the whole, a pleasure-loving people, even if we place pleasure after business as a rule, and we have a large "leisured" class, although even these have the reputation among some of our continental neighbours of enjoying themselves sadly. At the present moment our pursuit of pleasure is for the time at an end and those who purvey pleasure for profit will during the present season suffer financially. This is not only because thousands in all classes do not know from day to day when they may hear of the death of a near and dear relative. Balls and similar entertainments are not taking place, theatres are doing badly, dressmakers are idle, and publishers are unable to sell their wares, because men and women are alike absorbed in the topic of the day; and welcome as

[1] Middlesex Hospital Journal, vol. ii., p. 141.

distraction might be, it could be forced upon them in an acceptable form, they have no inclination to seek it. Undoubtedly the newspapers contain a great deal of matter that is widely read concerning the present campaign, but the meagre telegrams that announce the movements which are of vital importance to the nation's future welfare, and the belated and curtailed letters of special correspondents, cannot be held to banish the novel by simply supplying an equal quantity of reading matter to take its place. If publishers are holding over books that would otherwise be in the press, and works not bearing on the topic of the day are at a discount, it must be because the attention once fixed on sterner subjects is not to be diverted to lighter ones. The foreign journalist who expected to find us wailing in the streets after one of our early mishaps would not even now see any great difference in the attitude of the British public out of doors, whether in the metropolis or in some country town or village. He would find, however, if he had the advantage of personal acquaintance with individuals, that in all classes, but especially among those persons who have enough education to read widely and criticise intelligently, there were plain signs of the tension which has for some time existed and a considerable increase in the sternness and gravity of demeanour with which our French neighbours, at all events, credit us. He would also find that although the attitude of individuals towards him as a foreigner would be either polite or indifferent the English nation as a whole is very deeply resenting the attacks which foreign nations have made on us or have permitted the inferior organs in their press to make. After all, we reason, the organs may be inferior, but they are all the more dependent on the sympathy of their readers and all the more anxious to publish what they know will increase the number of their subscribers because it expresses their views. The effect of the war upon the national temper has been shown most in the desire it has aroused in all to take some part in the drama that is being enacted. Among those who have tendered themselves for active service, and some of whom, we fear, have been accepted, are hundreds who are probably in no way, either physically or by previous training, fitted for what they have offered to do. Many of them, if it had been suggested to them that they should try six months "roughing it" on a hunting or exploring expedition at the Cape, would have had no inclination to face the hardships. Many would have pleaded family or business ties as altogether insurmountable objections. And yet these men have voluntarily offered to endure far worse experiences than the worst they need have encountered in any private expedition for sport or pleasure, simply because the situation has evoked in them a craving to which they were strangers before. It is a patriotic feeling, consisting to a great extent, as it seems to us, in a distinctly national desire to be up and doing, a genuine anxiety to take part in working out a great episode in the nation's history. The craving, or whatever we may call it, is to be found even in those who admit regretfully that the barriers imposed by age and incapacity are insurmountable. It is the same feeling that has prompted thousands who have the poor always with them, in peace as well as in war, to organise work and contribute on behalf of those left behind and in need of assistance. There is an element of charity in what they do, but a still more powerful element is the desire to take part in what the nation is doing. It is to be hoped that we are now through our misfortunes, but it is possible that we may have worse before us. We trust that as a nation we shall meet either sequel with the quietness of demeanour that has won us the respect of our rivals in the world and which has nothing to do with stolidity; for if we are a quiet nation and a stern one the last two months have proved that we are not a stolid one.

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON: THE OFFICIAL LECTURES AND THE MURCHISON SCHOLARSHIP.

THE forthcoming official lectures will be delivered as follows: the Milroy, the Goulstonian, the Lumleian, and the Croonian lectures will be delivered respectively by Dr. F. J. Waldo, Dr. P. Horton-Smith, Dr. W. B. Cheadle, and Dr F. W. Mott. For the Milroy lectures Dr. Waldo will take as his subject "Summer Diarrhœa, with Special Reference to Causation and Prevention," and March 8th, 13th, and 15th will be the days of delivery. On the 20th, 22nd, and 27th of the same month Dr. Horton-Smith will deliver the Goulstonian lectures, and on March 29th and April 3rd and 5th Dr. Cheadle will deliver the Lumleian lectures. June 19th, 21st, 26th, and 28th are the dates fixed for the Croonian lectures which will be delivered by Dr. Mott. The lectures will be delivered at 5 P.M. We are informed by the Registrar of the Royal College of Physicians of London that the next examination for the Murchison scholarship will be held at the College on Monday, April 2nd, 1900, and two following days. The scholarship is open to any student of medicine who has been a registered medical student during a period of not less than five, and not more than seven, years at a hospital in London or Edinburgh, recognised by the Royal College of Physicians of London, or by the medical faculty of the University of Edinburgh, and whether holding a medical qualification or not. The examination will be conducted both orally and in writing and will include: (1) examination of patients, with reports on their cases; (2) questions on pathology and treatment; and (3) examination on specimens. The scholarship is of the value of 20 guineas and is tenable for one year. Intending candidates are required to send in their names to the Registrar of the Royal College of Physicians of London, Pall Mall East, London, not later than March 19th, with evidence of the duration of their medical studies from the deans of their respective schools.

THE NEW MEDICAL OFFICER OF THE LOCAL GOVERNMENT BOARD.

THE appointment of Mr. William Henry Power, F.R.S., to the important post of medical officer of the Local Government Board will, we feel sure, be hailed with satisfaction by the medical staff of the Board, by the other departments, and by those many persons outside the Board who have had occasion at one or another time to seek counsel from Mr. Power and to experience the mentally stimulating effect of his personal influence. As a worker in epidemiology Mr. Power occupies a very distinguished position, his knowledge and love of natural history being associated with an insight into epidemiological problems in a way the value of which has been duly recognised by the Royal Society and which led his former chief, the late Sir Richard Thorne, to speak of him on more than one occasion as the "prince of epidemiologists." Mr. Power has long since reminded the thinking world that infectious disease may not always be confined to one species, and that phenomena connected with its distribution cannot for all time be adequately or profitably explained by reference to the text-books. With the original attributes which Mr. Power possesses we may rest assured that the work of the medical department will not stand still and that many of the epidemiological problems which are at present pressing for solution, or at least for more light, will be faced and taken in hand. We expect, too, that Mr. Power will not be altogether content with the knowledge to be obtained from this country alone, but that he will, as necessity demands, despatch one or other of his staff to different parts or the Continent, there to study the behaviour of disease and the methods adopted for its

prevention or control. There is much to be done in this direction, as was shown by Sir John Simon as early as 1866 when he despatched Dr. (now Sir John) Burdon Sanderson and Dr. Whitley to study the nature and behaviour of what was locally regarded as "Siberian Plague" at St. Petersburg and in the country of the lower Vistula, and quite recently by Sir Richard Thorne. As his lieutenants Mr. Power has been given Dr. Franklin Parsons as first assistant medical officer and Dr. Bruce Low as second assistant medical officer. The work of both these gentlemen has for many years been before the profession and the public, and no doubt can be felt but that in them the newly-appointed medical officer will find able coadjutors. The investigations of Dr. Parsons in connexion with influenza, disinfection, and manure nuisances are too well known to need more than a passing notice, while his knowledge upon all matters connected with public health must have struck sanitary authorities and others who have been called upon to interview him officially as very thorough. Dr. Bruce Low has on numerous occasions in the past portrayed for us in commendable detail the behaviour of local outbreaks of disease, and the manner in which sundry so-called sanitary authorities have neglected all that part of their duties which could possibly come under the head of "sanitary"; and more recently his work on the diffusion of such diseases as cholera and plague have shown how well he is fitted for detailed epidemiological studies of this character.

THE ROD OR THE PRISON FOR JUVENILE OFFENDERS?

AT the autumnal meeting of the Society for the Prevention of Cruelty to Children Mr. J. Allanson Picton suggested some noteworthy amendments to the proposed Youthful Offenders Bill. This measure, it will be remembered, has already passed the House of Lords and is to be discussed in the House of Commons during next session. It provides for the imprisonment of young persons under 14 years of age, but allows the substitution of corporal punishment at the option of the delinquent—a truly remarkable concession. A child capable of obtaining his release on these terms must surely be gifted with a moral strength which is rare indeed among juvenile offenders. Mr. Allanson Picton is of this opinion. He desires, therefore, that the corporal punishment clause should possess a more definite and reliable authority than it has at present. He would place the decision respecting its exercise where it naturally ought to be placed—in the hands of magistrates. Furthermore, he would substitute it without option for the clause relating to imprisonment. He maintains that the "ignoble smart" of a birching, which could be judiciously combined with educative detention in a truant or industrial school, is much to be preferred to the demoralising associations of prison life. He points to the fact that flagrant misbehaviour among the sons of well-to-do people is scarcely ever corrected otherwise than on the lines which he advises, and the result is on the whole as satisfactory as could be expected. Another detail of his scheme requires that the age of a so-called "young person" should be raised to 17 years. Public opinion will, we hope, take careful note of these proposed amendments. We confess that they commend themselves to our judgment as eminently judicious.

ISOLATING THE PHTHISICAL INSANE.

THE *Journal of Mental Science* (January, 1900) publishes a paper on the necessity of isolating the phthisical insane read at a recent meeting of the Medico-Psychological Association by Dr. Eric France of Claybury Asylum. The paper shows from the post-mortem records of the London County Asylums at Claybury, Colney Hatch, and Cane Hill that while 67 deaths were certified as due to tubercle, active tubercle was found post mortem in 112 cases, this last figure not including 10 doubtful cases. "It will thus be seen," he says, "that at these three asylums the number of patients dying with active tubercle, as compared with those certified as dying from this cause, practically stand in the proportion of two to one." A number of valuable tables of mortality follow and the conclusion urged is that cases of phthisis in asylums should be isolated in the early stage of the disease before they begin to disseminate the bacillus to the detriment of others. The tuberculin test is now generally admitted to be the most valuable diagnostic measure for indications of early mischief. Of 55 suspected cases injected with tuberculin 45 reacted and 10 did not react. Of the latter five were alive and healthy in July, 1899; the other five died and the post-mortem examinations made disclosed no trace of tubercle. In the discussion which followed the paper Sir William Broadbent, Sir James Crichton Browne, and Professor Clifford Allbutt strongly urged the needs of special provision for the isolation and open-air treatment of such cases.

THE LAW AND THE LEICESTER GUARDIANS.

THE curtain has at length been rung down upon the comedy which the guardians of Leicester have been good enough to place upon the stage. The scene was the Court of Queen's Bench. In the previous acts certain of the guardians, with considerable "slimness" (to use the now so popular word), had thought to soothe the hard-hearted Local Government Board by appointing a vaccination officer who was himself opposed to vaccination. Even a Government Department, however, will turn at the last and the Local Government Board refused to recognise the appointment. The Divisional Court thereupon made a rule absolute for attachment of the recalcitrant guardians, only, not wishing to be brutal towards them, they were informed that if by a certain date a vaccination officer agreeable to the Local Government Board were appointed nothing further would happen. On Jan. 21st it was represented to Mr. Justice Channell in the Court of Queen's Bench that the 22 guardians had filed affidavits to the effect that a vaccination officer, Mr. H. E. Keyte, had been appointed, of whom the Local Government Board approved. The writs of attachment were therefore discharged and the 22 guardians were told that they would have to pay the costs. Surely a very silly comedy.

EXTENSIVE RESECTION OF THE BOWEL.

IT is very remarkable how little the general working of the body is affected by the ablation of even extensive portions of its substance. One or more of the limbs may be amputated, yet the man may be none the worse, and this might be expected; but even a highly specialised organ like the kidney may be removed without harmful effect provided that its fellow is in a condition to carry on double duty. Strange is it that an unpaired organ like the spleen can be excised without, so far as we can tell, any effect on the bodily economy, and in order to explain so curious a fact we have to resort to the theory that some other part of the body has taken on the work of the portion removed. Yet more strange, however, are the cases in which important portions of the organs of digestion and absorption are excised, for these are the very foundation of all animal life. In THE LANCET of Jan. 15th, 1898, we published an account of Dr. Carl Schlatter's case of complete extirpation of the stomach, the first instance of the successful performance of this operation, and later we printed a description of the physiological results of this severe procedure, in which it was shown that wonderfully little effect had been produced

on the function of digestion. After the event we feel able to explain such a result by saying that the digestive power of the stomach after all is not very great, and that its action is really preparatory to the action of the pancreatic secretion. The stomach, moreover, has but little power of absorption and therefore it is not so likely to be missed as would be a portion of the alimentary canal to which this function more especially belongs. A paper which we publish in this issue goes far to answer this argument. It has been specially translated for THE LANCET and gives a full account of another operation by Dr. Carl Schlatter. An Italian, stabbed in a brawl, was found to have protrusion of more than six feet of the small intestine, and when fully examined, some nine hours after the infliction of the injury, the prolapsed bowel was already dying. The only possible treatment was resection of the affected gut. This was done and the two ends were sutured together. In spite of the removal of so large a piece of intestine the man rapidly rallied and steadily improved in health and weight, so that when he left the hospital he weighed 165 pounds. Careful chemical estimations of his diet and of his excretions showed that the percentage of absorption of nitrogen was fully up to the normal limit, but that there was a greater loss in the fat of the food than should have occurred in health. His subsequent history was not quite so favourable, for eight months after the operation it was found that his weight had decreased by about six and a half pounds and that he was unable to tolerate the solid food to which he had previously been accustomed. He felt unequal to much work, but on the whole he was in very fair condition. Opinions differ widely as to the length of the normal small intestine, and there is still greater diversity as to the amount of bowel which may be removed without interference with the alimentary functions. For a full account of the experiments and cases bearing on this point we must refer our readers to Dr. Schlatter's important and instructive paper, where they are detailed. Suffice it to say that probably one-third of the small intestine may be removed without any or any material interference with the processes of digestion and absorption; but that if more than this amount be taken away malnutrition, often with diarrhœa, will in most cases follow. As the average length of the small bowel is about 18 or 20 feet, then six feet or two metres may be said to be the greatest amount of the small intestine which may be removed with impunity. The nearer the ileo-cæcal valve the less the effect of the removal of large portions of gut, for before the ileum is reached most of the important elements of the food have been absorbed. The only explanation we can give of the immunity from harm shown in these extensive operations is that the human body has wonderful powers of adaptation; it can accommodate itself to its surroundings, its diet, and its own conditions, but this adaptability has its limits, and when those limits are passed failure in the working of the body must result.

THE SANITARY INSTITUTE.

THE twenty-ninth course of lectures and demonstrations for sanitary officers, which commences to-day (Friday) at the Parkes Museum, Margaret-street, W., will be divided into three parts. Part I. will comprise Elementary Physics and Chemistry in relation to Water, Soil, Air, and Ventilation, Elementary Statistics, Meteorology, &c.; Part II. will deal with Public Health Statutes, By-laws, Municipal Hygiene, &c.; and Part III. will include Meat and Food Inspection. The fee for the complete course is £3 3*s.*, but either course may be taken separately, the fee for the first and third being £1 1*s.* and for the second £1 11*s.* 6*d.* Among the lecturers are the names of Dr. Edward F. Willoughby, Professor J. Lane Notter, Dr. Herbert Manley, Dr. Louis Parkes, Dr. J. F. J. Sykes, Professor A. Bostock Hill, Dr. Philip Boobbyer, Dr. H. R. Kenwood, Dr. Joseph Priestley, Dr. J. C. Thresh, Dr. George Reid, Dr. T. O. Dudfield, and Dr. Sydney Marsden. In connexion with the lectures arrangements have been made to inspect sewage farms, night shelters, and other places where practical demonstration in sanitary matters can be given, and those attending the lectures will also have an opportunity of inspecting food of various kinds unfit for human consumption.

THE OFFICIAL LECTURES OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE Erasmus Wilson lectures and the Arris and Gale lectures will be delivered respectively by Mr. E. Treacher Collins and Mr. B. G. A. Moynihan. The first-named lectures, which will deal with the "Anatomy and Pathology of the Eye," are announced to be delivered on Feb. 12th, 14th, and 16th, and the second-named lectures, which will deal with the "Anatomy and Pathology of some rarer forms of Hernia," on Feb. 19th, 21st, and 23rd. On Feb. 26th and 28th and March 2nd Dr. Arthur Keith will take for his subject "The Results of an Investigation of the Anatomy of Man and High Primates to determine more accurately the Relationship of Man to Living and Extinct Forms"; on March 5th, 7th, and 9th Professor A. W. Mayo Robson will deal with "The Surgery of the Stomach"; and on March 12th, 14th, 16th, 19th, 21st, and 23rd Professor C. Stewart, LL.D., F.R.S., will deliver a series of lectures on the "Protection and Nourishment of the Young in Plants and Animals." The lectures will be delivered at 4 P.M.

DR. CONAN DOYLE ON THE WAR.

DR. CONAN DOYLE, who is about to start for South Africa as one of the staff of the Langman Hospital, was the guest of the evening at the dinner of the Authors' Club on Monday night last. In responding to the toast of his health Dr. Doyle remarked that

> He was very optimistic about this war and the effect of it. To all who had any heart in their bodies it marked a turning-point in their lives as well as in the life of Great Britain. Some six or eight months ago he took the chair at a peace meeting. He could only say from his heart that he abjured that error. He had seen more positive virtue in this country during the last three months than during the whole of the 40 years of his life. He saw more alertness, more self-sacrifice in his own country, which had been prone to grow fat and obese and to think of nothing higher than a bank-book and an arm-chair. Such a rousing in a nation was a grand thing and one which England peculiarly needed at this time. There was not only a moral advantage in this but he saw a material one as well. Why, for instance, should they punish Kruger? That man had solved a question which every statesman had found insoluble. He would build a monument to Kruger the size of St. Paul's—putting him under it—and he would inscribe across it: "To the memory of the man who federated the British Empire." Kruger was the man in all the world who had made the British Columbian feel that he was blood-brother with the Queenslander.

ENDEMIC HÆMATURIA.

IT is now universally acknowledged that the endemic hæmaturia of South Africa is due to the presence in the blood-vessels of the bilharzia hæmatobia, but there is still much diversity of opinion as to the route by which this parasite gains entrance. According to one theory the organism is taken in with the drinking water, perhaps freely swimming, or more probably as a parasite in some intermediate host. In favour of this theory is the fact that in no small proportion of the cases the adult bilharzia has been found in the portal vein and its tributaries, pointing to the idea that it has entered by the alimentary canal. There

is, however, another theory which claims that the parasite enters the meatus urinarius during bathing or gets under the prepuce and subsequently passes into the urethra. The fact that males are much more frequently attacked than females, that the veins of the urinary apparatus, especially of the bladder, are the seat of the organism, and, further, that the Kaffirs of Natal are said to tie a string round the penis while bathing, are decidedly in favour of this mode of ingress. The Kaffirs claim that in this way they are able to prevent the disease. It is by no means improbable that the parasite may enter the body by both of these methods, though hæmaturia would probably only follow the invasion by the urinary route. In any case it would be well for our army medical officers in South Africa to bear in mind this danger to our troops.

THE QUESTION OF INDECENT LITERATURE.

MR. HAVELOCK ELLIS writes to us upon this difficult subject. After referring to the recent destruction by order of a bench of magistrates of a number of copies of "Studies in the Psychology of Sex" he continues—

"I should like to be allowed to state that, so far as I am concerned, I can have no quarrel with the police on this matter. After the unsatisfactory conclusion of the Bedborough prosecution I resolved not to issue my work in this country, and I have strictly adhered to that resolution. The University Press, Limited, so far as they had the handling of my work, were under engagement to issue it only from Germany and not to advertise it without consulting me. They have, however, evaded the spirit if not the letter of their agreement by stocking a certain number of copies in England, and they have issued a circular which, though, as I understood, it was only sent out to the profession, I emphatically disapproved of. I addressed repeated protests to the publishers, and I cannot complain if the police have now enforced my protests. I am content to issue my work in America, where a medical publisher is unhampered in distributing a medical work to the profession. The wider question, unfortunately, still remains where the Bedborough prosecution left it. A work which (both before and since that prosecution) has met with the approval—without a single dissentient voice, so far as I am aware—of competent authorities and medical organs, not in this country only but throughout Europe and America, cannot here be sold even to members of the medical profession. It is perhaps significant of the feeble influence which medical opinion possesses in this country. In any case, however, I have no intention of fighting for that recognition which the law, as embodied in the police, refuses to grant. I must be content to devote my energies to doing my own work and leave the next step to others."

In our issue of Nov. 19th, 1898 (p. 1344) we commented in a leading article upon the results of the Bedborough trial and pointed out that the moral for scientific authors was obvious—namely, be careful about the publisher. Mr. Havelock Ellis appears to feel that he has neglected exactly this precaution. We have every sympathy with him in the position in which he was placed by the Bedborough trial.

DUTIES OF SCOTCH MEDICAL OFFICERS OF HEALTH AND SANITARY INSPECTORS.

THE Local Government Board for Scotland has by means of an order dated Jan. 18th, 1900, recalled the regulations as to the duties of medical officers of health and sanitary inspectors which were issued by the Board of Supervision in 1890. They have in place thereof, and largely by virtue of the fact that certain local authorities have failed to themselves make the regulations incumbent upon them by the statutes, issued draft regulations which may be adopted by the local authorities and which relate to the duties of both medical officers of health and sanitary inspectors. The Local Government Board has in addition called upon each of these officers to make a report to the Board for the year ending Dec. 31st upon the sanitary conditions of his district during 1899. The report of the medical officer of health is to contain a detailed account of what has been done during the year, very much in the same manner as is required of medical officers of health south of the Tweed, while the sanitary inspector, amongst other things, is to forward a general account of the sanitary state of the district as regards water-supply, drainage, scavenging, nuisances, &c. This duty of reporting upon the water-supply of the district—that is if the instruction implies an account of the source, storage, and filtration of the water-supply—seems to us a little outside of the province of the inspector and rather calculated to give rise to some misunderstanding between this official and the medical officer of health. With regard, however, to the relation of these two officials to one another we are glad to see that in the regulations relative to the duties of each the local authority, if they wish the medical officer of health to superintend the work of the sanitary inspector, are to introduce a special clause for the purpose; although, be it noted, the draft regulations are not without unmistakeable indications that such control is in large part contemplated by the Board, at any rate in so far as the management of infectious disease is concerned. In the regulations as to the duties of both of the officers here referred to, the instructions are in certain instances less general and more specific than is the case with those in force for English officials. For instance, the sanitary inspector is instructed to visit the common lodging-houses and the houses let in lodgings at least once every calendar month. There is much to be said for these precise instructions and later they may perhaps be introduced into the English regulations.

'A LIVING CENTAUR."

UNDER this fantastic title a curious example of genu recurvatum congenitale is on exhibition at the present time at the Royal Aquarium. The freak in question is a negro, 23 years of age, who gives an exhibition of his equine attainments by running, trotting, and pacing on all fours. He is able to assume this position with considerable ease owing to the condition of his knee-joints. These are over-extended to such a degree that the legs form a very obtuse angle with the thighs, while the backward projection of the condyle of the femur gives the joints a superficial resemblance to the hock of a horse. The amount of movement possible in the joints is extremely limited, there being practically no power of flexion. When sitting with the body vertical and the thighs in contact with the ground the feet are elevated to a height of about six inches from the floor. According to the showman the patellæ are entirely absent. After such a superficial examination as was possible in a showroom the left patella appeared to us to be present although atrophied, while the right could not be certainly felt. Mr. Shattock[1] has pointed out that the patellæ are often thought to be absent in these cases owing to the fact that they lie in contact with the concave anterior surface of the femur just above the trochlear surface and are therefore difficult to detect. The movements of the lower limb in running upon all fours take place mainly at the hip-joints, the feet being brought forwards by a movement of circumduction. The hip-joints are capable of flexion to a sufficient extent to allow of the anterior surface of the thighs being brought in contact with the trunk and the feet being placed over the shoulders, so that the man is able to scratch the back of his head with his toes. When running on all fours and viewed from the side the gait bears a curious resemblance to that of a trotting horse, although when seen from behind the movement of circumduction at the hips is

[1] Transactions of the Pathological Society of London, vol. xlii., 1891.

very evident. The influence of a maternal impression is, of course, forthcoming as an explanation of the condition, the story being that his mother was bitten in the left arm by a vicious horse when five months pregnant. Further colour is given to this tale by the condition of the man's left arm. This is kept extended and somewhat rotated in and there is complete loss of movement at the elbow joint although no definite signs of disease of the joint are present. The biceps muscle is somewhat atrophied, probably as the result of the absence of movement, and this fact is made use of by the showman as a ground for his assertion that the muscle is placed upon the wrong aspect of the limb. The claim of the "living centaur" to be a descendant of Ixion and Nephele will, we fear, not stand investigation, but he is at any rate an interesting and marked example of a somewhat uncommon congenital deformity.

GALL-STONE CREPITUS AND FRICTION IN DIAGNOSIS.

IN the *International Medical Magazine* (New York) for December, 1899, Dr. J. M. Anders calls attention to the value of gall-stone crepitus and friction in diagnosis—signs which appear to have received very little notice and which are not looked for as much as they should be. Dr. E. M. Brockbank, in speaking of latent calculi, refers to cases in which they were felt like nuts in a bag. Frequent and patient practice has taught Dr. Anders that when calculi can be felt crepitus is rarely absent. The following case illustrates the value of gall-stone crepitus in diagnosis. A woman, aged 52 years, was seized with severe pains in the right hypochondrium which at times extended to the right shoulder and the back, and were accompanied by nausea. The attack lasted a day and then disappeared, but returned in a couple of days. There was no jaundice but the stools were somewhat deficient in bile. The liver was slightly enlarged and the gall-bladder was slightly distended. Analysis of the urine showed that bile was absent. While a suspicion of cholelithiasis was aroused the absence of jaundice and chills or febrile disturbance threw doubt on the diagnosis. The patient was then examined carefully for calculi in the gall-bladder. Deep palpation, combined with a gentle lateral up-and-down movement of the finger-tips, elicited a distinct, fine, grating sensation (crepitus). On operation 150 calculi were found in the gall-bladder. In a second case there were symptoms of indigestion for two years with from time to time pain in the lower epigastric region and only occasionally in the hypochondrium. The epigastrium and region of the gall-bladder were very tender. The gall-bladder was somewhat distended and the liver was slightly enlarged. On deep palpation during inspiration crepitus was felt. In a third case the patient was a woman, aged 60 years, who came under treatment in November, 1897. What appeared to be attacks of indigestion began in August, 1896, and recurred at intervals of several days. After two months jaundice supervened. Slight pain was constant and paroxysms of colicky pains were experienced at times. They were not severe and according to the patient were not accompanied by deepening of the icteroid tint. Examination showed enlargement of the liver and a dense mass of the size of a hen's egg in the region of the gall-bladder. Carcinoma of the liver or its appendages had been diagnosed by several physicians but the duration of the jaundice for more than a year and the absence of cachexia were opposed to this view. Palpation gave a negative result, the patient being rather stout, but on combining auscultation with palpation a faint grating sound was heard. Treatment by olive oil was followed by the passage of large numbers of calculi. In obese subjects (in whom calculi are common) crepitus cannot be felt on palpation. The writer suggests that the combined method of palpation and auscultation should be used when crepitus cannot be elicited by palpation or friction heard on auscultation. In examining for crepitus the patient should be in the dorsal decubitus position with the legs flexed. The area of the gall-bladder is then deeply palpated. If crepitus is not obtained the finger-tips should be dipped into the abdominal wall just below the fundus of the gall-bladder and then drawn upward over the organ as though attempting to roll the fundus forward and upward. If this fails the patient should inspire deeply but slowly, during which gentle counter-pressure should be made with the finger-tips. The tactile sense may be increased by pressing on the fingers with the disengaged hand so as to put the muscles of the examining hand at rest. When palpation fails auscultation should be practised.

PRIVATE LABORATORY LEGISLATION.

THOSE who carry on the work of scientific research in private laboratories may well be dismayed at the prospect of State interference, yet it has been proposed in Germany to introduce a Bill which will provide some sort of public control. According to our Berlin correspondent it is said that the Bill will contain provisions by which investigators will be compelled to take precautions against the escape of pathogenic germs. There is little doubt that the contemplation of such a measure has been inspired by the unfortunate outbreak of plague which occurred in a hospital in Vienna and which was traced to the escape of infective material from a bacteriological laboratory. We agree that excessive care must be exercised by all bacteriological investigators when they are dealing with the cultivation of highly pathogenic organisms. In most of the capitals of Europe there are many laboratories of the kind which are, so to speak, nurseries of the seeds of disease, and it is right that some effectual barrier should be placed round these centres of just possible infection. Nevertheless, it would be a sad thing for the future of bacteriological research if it can only be carried out in State laboratories. We do not hesitate to say that the brilliant results of bacteriological researches, and chemical and physical researches too, during the past decade have had their origin in private laboratories. It will be interesting to learn the exact terms of the proposed Bill. It is to be hoped that it will not interfere with clinical practice in its relation, for instance, to the examination of sputa and other pathological products. The bacteriological investigator knows well the danger of careless practice in his researches with pathogenic organisms. The outbreak of plague was of a very exceptional kind, and the fact that there are scores of laboratories in this and other countries in which diligent work has been prosecuted without the slightest hitch is a forcible argument that State interference is not needed. Indeed, we venture to say that it would hardly be brooked in this country, but would be held as unduly meddling with the liberties of the individual and as constituting a distinct obstacle to the advance of scientific knowledge.

PLASTIC ACTIVITY OF THE ANIMAL CELL.

M. L. RANVIER under this title gives in the January number of the *Comptes Rendus* for the present year the details of a curious observation which he has recently had the opportunity of making. He states that having gradually heated to 36° C. the peritoneal serum of a rat which contained some air-bubbles he noticed that the lymphocytes of the fluid moved towards the bullæ and on arriving at their surface became flattened just as the cells would have done if they had impinged against a solid substance. If the temperature was allowed to fall to 21° C. the cells again

assumed the spheroidal form. On increasing the temperature they once more became flattened. M. Ranvier suggests the term "plastic activity" to denote this phenomenon, for he regards the change of form as the consequence of the activity of the cell or, in other words, considers it to be a vital phenomenon. He was, he believes, the first to notice the flattening of lymphocytes against solid bodies, but acknowledges that he should not have expected such flattening to take place against an air-bubble. It seems to show, he thinks, that cells are highly sensitive and possess extremely delicate motor reactions. The best mode of performing the experiment is to dust a little starch on a slide, then to permit a drop or two of the peritoneal fluid to fall amongst the grains, and gently to lower the cover which thus comes to be supported by the larger grains of starch. A few bubbles of air are then introduced into the fluid. The heat may be applied by approximating a fifty-candle power electric light or by using the ordinary warm-stage.

OPENING OF THE NEW BATHS AT HELOUAN.

THE little town of Helouan, situated in the desert about 15 miles south of Cairo and three miles from the Nile, has been for many years a resort of invalids, especially rheumatic invalids, on account of the natural waters which are abundant there. Some years ago the place became fashionable on account of the fact that the Khedive Tewfik found much benefit from the waters, but after his death Helouan to some extent suffered an eclipse. Lately, however, its virtues would appear to have been re-discovered, for an installation of baths and bathing appliances, embodying all the most recent forms of apparatus in use, has taken place. The new bathing establishment has been formally opened by his Highness the Khedive.

THYROID EXTRACT IN THE TREATMENT OF TUBERCULOSIS.

PROFESSOR EDWIN KLEBS reports in the *Berliner Klinische Wochenschrift* (Dec. 11th, 1899) the results of trials and studies made by him on the above subject, as he announced at the meeting of the Tuberculosis Commission at Munich. He used the juice of the thyroid as obtained by pressure and administered it to the subjects of phthisis in an early stage, all of whom were markedly suffering from gastric symptoms (achylia gastrica), while the changes in the lungs were but slight. The drug was not given empirically or in haphazard manner, but in accordance with the results of experiments carefully carried out previously on animals, in which Klebs had found that when the thyroid gland had been removed the same gastric conditions resulted as was the case in the patients alluded to above. It must also be noted that these patients were found to present a noticeable atrophy of the thyroid gland. The gastric juice in dogs experimented on after ablation of half of the thyroid gland and simultaneously subjected to injections of tuberculin was found to be almost entirely devoid of hydrochloric acid and of pepsin, while the intact half of the dog's thyroid was found to be undergoing atrophy with a total disappearance of its colloid substance. It thus appeared as though the action of tuberculin was inimical to the thyroid function and that as a net result there supervened after awhile the gastric conditions referred to above. Concluding from these experiments that the feeding of tuberculous patients who suffered from severe achylia gastrica with fresh thyroid secretion might have a beneficial effect, the theory was carried out into practice with the result that much benefit was obtained by this method of treatment. Klebs records the clinical history of two phthisical patients thus treated and points out that in both cases a marked improvement of bodily condition and an increase of weight followed the treatment. Other improvements in respiratory capacity and in respiration generally are also recorded and a marked increase in appetite which before had been very feeble.

A NEW FONT FOR HOLY WATER.

WE have received from Mr. J. J. Bruns, jun., of Arnhem in Holland, several pamphlets on the possible danger of various infections being communicated through the medium of the holy water contained in the ordinary font in the vestibule of a Roman Catholic church. Mr. Bruns had his attention first directed to this subject by the serious illness of his son, a boy seven years of age. One day in 1892 the father and son went to one of the churches in Arnhem and soon after their entry the boy complained of his left eye, saying that something had got into it from the holy water. Medical advice was at once obtained and in two days the boy was taken to Utrecht to Professor Snellen, under whose care he remained for three months. The state of the eye was very serious but eventually it was saved. Mr. Bruns at first doubted whether the holy water had really been the cause of this misfortune, and to throw some light on the question he had a great many samples from churches in different towns in Holland submitted to microscopical examination. The result was the discovery in most cases of abundant bacterial growth with occasional presence of staphylococci and other pathogenic forms. Two guinea-pigs injected intra-peritoneally with sediment from the holy water of a church in Amsterdam died in 30 hours from peritonitis, and two others injected subcutaneously with the same suffered from purulent inflammation at the place of insertion. In November, 1896, Mr. Bruns devised a means of completely avoiding this contamination. The holy water is stored in a narrow-necked jar inverted in a shallow basin so that the outflow from the jar ceases as soon as the water in the basin covers the neck of the jar. One end of a bent tube filled with hair is immersed in the water in the basin and the other end, overhanging the edge, delivers a constant stream of small drops raised by the capillarity of the hair. All these parts are enclosed in an ornamental oaken case somewhat resembling that of a timepiece. This case projects from the wall, and the stream of drops falls through an opening in the bottom of the case into a receptacle which at once carries away the excess, and the congregation on entering the church have merely to hold their fingers for an instant in the stream. The apparatus was submitted to Monseigneur van de Wetering, Archbishop of Utrecht, who expressed his approval of it, and by his secretary wrote to Mr. Bruns authorising the mention of his name in connexion with it.

PUBLIC VACCINATORS AND REVACCINATION.

IT appears from a Hull newspaper that the Patrington Board of Guardians are in some mental confusion as to their duty with regard to the payment to their public vaccinators of fees for revaccinations. One member "contended that revaccination fees were not legal and would not be passed by the auditor," and he referred to the inspector as having held that such fees should only be paid under protest. After discussion it was decided not to pay the bills in the meantime. The attitude of the guardians is difficult to understand in presence of the plain provisions of the Vaccination Acts, of the Local Government Board order, and of the contract entered into by the Patrington Board of Guardians and quoted at their meeting. Section 8 of the Vaccination Act of 1867 gave power to the Privy Council to issue regulations as to the revaccination of persons applying to be revaccinated. A later Act transferred these powers to the Local Government Board. Article 3 of the Vaccination Order of 1898 deals quite clearly and specifically

with revaccination, fixing the minimum fee for every successful revaccination at 5*s.* or 2*s.* 6*d.*, according as the operation is performed at the home of the vaccinee or elsewhere. The only reservation is that no payment shall be made where the person revaccinated is under 10 years old, or has been revaccinated within 10 years. Subject to this proviso and to their own contract made in terms of the Board's order, the guardians have no choice but to pay, unless indeed they propose to repudiate their debts and to trust that fear of dismissal may prevent their officers from taking legal proceedings to enforce payment. Of course, all this has nothing to do with compulsory revaccination. Most unfortunately for the public safety and by no means to the credit of the present Government there is no pressure or compulsion in the matter; but even under the existing law anyone who chooses has a right to demand revaccination at the hands of the public vaccinator, and that official has a right to insist on the guardians paying him for such revaccination.

THE RECENT EPIDEMIC OF PLAGUE IN PORTUGUESE INDIA.

FROM the report on the plague in Daman by Dr. Viriato João Pinto, the special commissioner of the sanitary authority of Portuguese India, which has recently reached us, we learn that during the continuance of the epidemic from September, 1898, to October, 1899, 504 persons were attacked, of whom 303 died—a mortality of 60·1 per cent. A copy of the correspondence which passed between the Portuguese and the British sanitary authorities is appended, as also are a number of statistical tables and charts.

THE arbitrators, Sir James N. Dick, K.C.B., Colonel C. Bowdler, and Inspector-General Belgrave Ninnis, M.D., R.N., who were appointed to decide upon the difficulties which had arisen at Stockport with regard to the local branch of the St. John Ambulance Association have delivered their opinion. They find that the Stockport Centre has not discharged its duties in a satisfactory manner, but no blame attaches to the chairman; that the chairman of the centre should summon a meeting of those gentlemen whose names are on the list as members of the committee and consult with them as to the best method of reviving the committee; and that Mr. Ferns should be re-appointed secretary provided that he can satisfy the committee as to satisfactory relations being preserved with the medical profession in Stockport.

WE learn that a draft memorial is to be presented to the Local Government Board by the Central Hospital Council for London with a view of obtaining for hospitals exemption from local rates. This has been submitted to the Council of the Metropolitan Hospital Sunday Fund for their support. The Council of the Metropolitan Hospital Sunday Fund, while giving their general assent to the principle advocated in the memorial, have asked their General Purposes Committee to consider and report upon it.

THE annual general meeting of the Neurological Society of London will be held on Thursday, Feb. 8th, 1900, at 8.30 P.M., at the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., when the President-Elect, Dr. A. D. Waller, F.R.S., will deliver an address on the Excitability of Nervous Matter with Special Reference to the Retina.

DR. BURNEY YEO has been appointed by the Council of King's College, on his resignation of the chair of Medicine, Professor Emeritus and Consulting Physician to King's College Hospital.

THE annual discussion of the West London Medico-Chirurgical Society will take place on Friday, Feb. 2nd, commencing at 8.30 P.M. The subject, "The Treatment of Primary and Secondary Syphilis," will be opened by Mr. Alfred Cooper, and visitors are invited to be present to take part in the discussion.

SIR HUGH REEVE BEEVOR, Bart., M.D., F.R.C.P. Lond., has been elected the representative of the Society of Apothecaries on the General Medical Council for one year from Feb. 6th.

THE man Hopwood, to whose committal we referred in our issue of Jan. 20th (p. 182) has been sentenced at the Birmingham Quarter Sessions to 15 months' hard labour.

THE treasurer of the Metropolitan Hospital Sunday Fund has received the sum of £1090 3*s.* 3*d.* from a bequest of the late Mr. Thomas King of Tisbury.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE Royal Commissioners who were appointed to inquire into the subject of the water-supply within the limits of the metropolitan water companies have just issued their final report. The Commissioners, it may be remembered, were appointed on May 1st, 1897, and the Commission originally consisted of Lord Llandaff, the Right Hon. John William Mellor, Sir John Dorington, Sir George Barclay Bruce, Mr. Cripps, Q.C., Mr. A. de Bock Porter, and Major-General A. de Courcy Scott, the water examiner appointed by the Local Government Board. The secretary was Mr. Cecil Owen. The terms of the Commission embraced three chief issues: (1) whether having regard to financial considerations the present metropolitan water companies should be purchased and in case of purchase whether they should be acquired and managed by one authority or by several authorities; (2) whether if the undertakings were not purchased it was advisable that additional powers of control should be exercised over them; and (3) whether it was practicable to connect two or more different systems of supply in the administration of the metropolitan water companies and if so* by whom and in what proportion the cost of connecting them should be borne and what legal powers would be necessary to give effect to any such arrangement.

In consequence of the failure of the water-supply in the East of London and a fear that such a misfortune might again take place the Commissioners were requested to obtain evidence and report as quickly as possible on the third issue which was presented to them. The Government realised that a water famine in the East-end might cause great distress to the inhabitants and it was hoped that if some practical scheme could be immediately devised and carried out this deplorable state of things might be obviated, at any rate for a time. Evidence was therefore taken by the Commissioners, three schemes were submitted to them, and as a result of their inquiry they issued their first report of which a full digest was given in THE LANCET.[1] As the result of this report the Government introduced a Bill which made it legal that inter-communication between the mains of the various companies should be at once carried out under the supervision of the Local Government Board, and inter-sale of water between the different companies was permitted. As the result of this Bill a considerable quantity of water was supplied to the East London Waterworks Company and the East-end of London was fairly well supplied with water during last summer.

The first report was signed by all the Commissioners. Since that time two of their number have died—Mr. Cripps, Q.C., and Major-General Scott. The second and final report is therefore signed only by the six surviving Commissioners.

[1] THE LANCET, Jan. 28th (p. 241), Feb. 4th (p. 313), and Feb. 11th (p. 383), 1899.

The intimate knowledge possessed by Major-General Scott of the whole of the works of the companies which supply London with water, his knowledge of engineering, and his thorough acquaintance with the whole of the details of this complicated subject must have made his advice to the other Commissioners of the greatest possible value. It was evident in many of the 84 public meetings which were held that Major-General Scott was able to direct the evidence to points of the greatest importance which might otherwise have escaped notice, and that his help, always given quietly and unostentatiously, was appreciated by some at least of those Commissioners who were naturally not so fully informed as he was as to the nature of the technical evidence which was given. The Commissioners state in their report that they met on 84 days and there were therefore many private sittings on which Major-General Scott's knowledge must have been of service to the Commissioners, and when he had naturally an opportunity of speaking with greater freedom than was possible at a public meeting. It is a pleasure to point out that the Commissioners have recorded their sense of obligation to Major-General Scott, who they say was able to supply them in October last with a full statement of his opinions on the subjects of their inquiry, and they add that they have largely availed themselves of the valuable assistance he thus afforded in framing their report.

We have mentioned that on one issue the Commissioners' report has already been given, and the practical results which have been gained. It remained for the Commissioners to report on the two first issues which were submitted to them, and it may be well to give exactly the terms of reference. The Commissioners were instructed to inquire and report:—

1. Whether having regard to financial considerations and to present and prospective requirements as regards water-supply in the districts within the limits of supply of the metropolitan water companies, it is desirable in the interests of the ratepayers and water consumers in those districts that the undertakings of the water companies should be acquired and managed either (a) by one authority, or (b) by several authorities; and, if so, what should be such authority or authorities. To what extent physical severance of the works and other property and sources of supply of the several companies and the division thereof between different local authorities within the limits of supply, are practicable and desirable; and what are the legal powers necessary to give effect to any such arrangements.

2. If the undertakings are not so acquired, whether additional powers of control should be exercised by local or other authorities; and, if so, what those powers should be.

At their first meeting which was held on May 29th, 1897, the Commissioners decided that their sittings for the reception of evidence should be open to the public and to representatives of the press, and that the parties concerned in the inquiry should not be represented by counsel. Pressing applications were, however, received from the metropolitan water companies and from the London County Council to reverse their ruling in that respect, and having regard to the vast pecuniary interests involved the Commissioners decided to allow counsel to appear on the understanding that they should only examine witnesses or address the Commissioners on points which were in the opinion of the Commissioners desirable. The metropolitan water companies, the London County Council, the Corporation of London, the county councils of Middlesex, Surrey, Kent, Essex, and Hertfordshire were then invited to give evidence. Of these bodies the London County Council tendered the evidence of many witnesses and occupied no less than 17 days of their sittings. Amongst other witnesses were Sir Alexander Binnie, their chief engineer; Mr. H. E. Haward, their comptroller; Mr. G. L. Gomme, their statistical officer; Mr. H. L. Cripps, their Parliamentary agent; Mr. Shirley Murphy, their medical officer of health; and Mr. W. H. Dickinson, the chairman of the Water Committee. Three other members of the council gave evidence—Sir John Lubbock, Sir Arthur Arnold, and Mr. C. A. Whitmore. The Corporation of London appeared through their Remembrancer, Mr. Gabriel P. Goldney. The vestries and district boards of works within the county of London were invited to tender evidence either by sending witnesses or by giving their opinions in writing, and of 42 authorities 23 replied. Evidence was also given on behalf of the county councils of Middlesex, Surrey, Essex, Hertfordshire, of the county borough of Croydon, the borough of Richmond, and the Croydon District Council.

The Commissioners state that the information which they desired to obtain from the water companies was very readily given, and they examined at length Mr. Middleton (one of the engineers of the Staines reservoir scheme), Mr Hunter Sir Frederick Bramwell, Mr. Charles Hawksley, and Mr. E. W. Eaton. Sir William Crookes and Professor Dewar gave evidence as to the quality of the water supplied. The late Sir Edward Frankland (the official analyst), Mr. Allen Stoneham (the auditor appointed by the Local Government Board to examine the accounts of the water companies), the chairman and engineer of the Thames Conservancy, and the clerk of the Lee Conservancy Board were also examined. Reports of the evidence given by these witnesses have already appeared in THE LANCET, and it will doubtless be shortly published *in extenso* from the shorthand notes taken for the Royal Commissioners.

At the commencement of their report the Commissioners point out that there were some considerations of great weight on the question of the advisability of purchase of the London water undertakings which seem to them to be excluded from their inquiry. For example, the Duke of Richmond's Commission in 1869 gave it as their opinion that the control of the water companies of London should not be in the hands of trading companies, but that on grounds of public policy the water companies should be under public control and entrusted to a responsible body. With regard to the question of public policy the Commissioners come to the conclusion that they were not asked to pronounce an opinion. In the course of their inquiries it was, they point out, contended, on the one hand, that various legal enactments which had been already made, as, for example, the sinking fund clauses which regulate the raising of new capital by the metropolitan water companies, expressly contemplated the ultimate purchase of the companies' undertakings. It was urged, moreover, that the connexion between public health and the water-supply strengthened the feeling in favour of its municipalisation. On the other hand, it was contended that it was inexpedient from a financial point of view that any representative body largely elected by the working classes should by the purchase of such an undertaking as the supply of water become a large employer of labour. The Commissioners decided that the real question which they had to determine was the expediency of purchase in the interests of the ratepayers and water-consumers on financial grounds alone and with regard to the future as well as the present requirements of Water London. This, however, they insist is one only of the considerations which have to be taken into account before a policy of purchase is adopted or rejected, but it appeared to them to be the only question which they were instructed to advise upon. Early in the course of their inquiry the Commissioners found it necessary to consider whether or not it was their duty to re-open questions which had been reported upon by the Commission presided over by Lord Balfour. They came to the conclusion that they were not empowered to reconsider the matters which had been so recently decided, and at their second public meeting, which was held on Dec. 6th, 1897, they gave a public intimation to the effect that the questions on which Lord Balfour had reported would not be re-considered, and that speaking generally they accepted the findings given in the Balfour Report.[1] In consequence of this decision much evidence which the county council of Hertfordshire and the London County Council wished to bring before the Commissioners was necessarily excluded. This evidence dealt with the actual amount of water which can be obtained from the present sources of supply. The London County Council then contended that on financial grounds alone it would be better for the people of London to obtain as quickly as possible a new supply of water from Wales. The Commissioners therefore felt bound to consider evidence tendered on this subject and they found it "voluminous and conflicting." The estimates given were of so technical a character that it became necessary to appoint an assistant commissioner, Colonel W. H. Rathbone, whose services they found of great value in assisting and helping them to form some opinion as to the comparative cost of bringing a new supply of water from Wales and of making additional storage reservoirs in the valley of the Thames so that more water could be obtained from that source.

The Commissioners considered in detail the financial position of the metropolitan water companies and the terms of arbitration on which the water companies should be bought; they give a digest of the contentions of the London County

[1] Report of the Royal Commission appointed to inquire into the Water-supply of the Metropolis, 1893.

Council on this matter and then go on to inquire what the financial results of such an arbitration would be likely to be. The opinions of local authorities with regard to the expediency of purchase are summarised and an account is given of cases in which water-supplies have been purchased by provincial corporations. The Commissioners then give their views of the present and prospective requirements of Water London and their opinion as to the expediency of purchase. Stated generally, say the Commissioners, the requirements of the population are: a supply of pure and wholesome water constantly laid on at such a pressure as to make the water reach the top storey of the highest house and in quantity sufficient from time to time to meet the needs of the growing number of inhabitants. In order to obtain such a supply it is not necessary at present to go far afield for the water, but they think that, having regard to the prospective requirements of supply in Water London, it is desirable that the undertakings of the water companies should be acquired and managed by a public authority. They then pass on to consider by what authority the purchase should be effected. On this point they insist on the fact that only one public body has manifested a desire to buy the undertakings of the metropolitan water companies and that it is admitted that if such a purchase were made the undertakings would have to be divided in such a way as to give the outlying authorities their share of them. This severance would be a costly proceeding. Inasmuch, then, as all the metropolitan counties except Hertfordshire are bent on demanding what the London County Council are pledged to concede—that is to say, their own share of the undertakings—they think that a purchase by the London County Council must necessarily be followed by a severance and division of the works of supply, and this course appears open to so much objection that it is practically inadmissible. The supplies of water which can be obtained from basins of the Thames and Lee are, the Commissioners believe, sufficient to supply London for many years to come, and should efficient conservancy of the rivers be maintained and the river water be adequately treated, the wholesomeness of the supply can, they believe, be maintained. The undertakings should in the public interest be placed under the control of a permanent Water Body and not of a fluctuating body. They suggest that a Water Board should consist of not more than 30 members, that these should be selected on account of their business capacity and knowledge of matters connected with water-supply, and that the Board should be so constituted as not to give a preponderance to any one of the conflicting interests concerned. The size and importance of the area affected make the matter one as much of national as of local concern and for that reason the Commissioners think that the proceedings of the Board should be brought automatically and periodically under the observation of Parliament, and that it should include delegates of the Local Government Board in order to ensure that the influence of the Executive Government should be continuously felt. The Commissioners then go on to suggest what the composition of the Water Board should be and what powers it should have. The latter part of the report is occupied by the question of the powers of control which might be exercised over the existing water undertakings and this important subject is considered in some detail. The report has evidently been drawn up with very great care and it deserves study. We have been able here only to describe its more salient features, and in concluding this brief notice we may mention the fact that the report is provided with a careful index consisting of no less than 10 folio pages. The Balfour report issued on its first publication contained no such index and we must highly commend this innovation, which is doubtless due to Mr. Cecil Owen, who, we are glad to see, receives in the last paragraph of the report an appreciative note on the excellence of his services.

VITAL STATISTICS OF THE DUTCH NAVY IN 1897.

AT the present moment the vital statistics of the naval and military forces of any European nation are important to us, for when the Boer war is over there is no doubt that considerable reorganisation of our defences will take place, when all reliable hygienic information will be welcomed. The admissions to hospital per 1000 of strength in the Dutch Marine Service during the year 1897 were as follows: Europeans, 1975; Asiatics, 1325; Africans, 1481; the average strength in the three categories having been 17,254, 32 833, and 80 respectively. By far the larger proportion of the disability was due to what are collectively termed "palustral fevers," the admissions under this heading being set down at 20,904, thus apportioned: Europeans, 10,978; Asiatics, 9906; Africans, 20. During the four preceding years, with an average strength stated to have been about the same as in 1897, the admissions were as given below:—

1893	... admissions for "palustral fever" ...					17,447
1894	...	,,	,,	,,	,,	... 13,496
1895	...	,,	,,	,,	,,	... 16,970
1896	...	,,	,,	,,	,,	... 16 416
1897	...	,,	,,	,,	,,	... 20,904

Apparently, therefore, the year under report was an exceptionally unhealthy one with regard to malarial affections. In 1897 cholera caused 161 admissions with 106 deaths among the Europeans, and 69 admissions with 52 deaths among the natives, but with the exception of beri-beri the ravages committed by the other general diseases were inconsiderable. Small-pox, chicken-pox, and measles were each represented by a case or two, chiefly among the Asiatics, the type being invariably extremely mild. Diphtheria was entirely unrepresented, and only 37 cases in all of enteric fever were treated, with five deaths, 29 of the cases occurring among the white troops and eight among the blacks. 283 Europeans and 1955 natives were under treatment for beri-beri during the twelvemonth, the casualties among the former being eight deaths and 40 invalidings, and among the latter 84 deaths and 402 invalidings. The following statement showing the admissions to hospital on account of beri-beri during the preceding quinquennium would appear to point to a satisfactory diminution in the incidence of this terribly fatal disease:—

1893	... ... admissions for beri-beri					6174
1894	... ...	,,	,,	,,	... ...	4994
1895	... ...	,,	,,	,,	... ...	5676
1896	... ...	,,	,,	,,	... ...	5780
1897	... ...	,,	,,	,,	... ...	2238

On the other hand, syphilis seems to be increasing considerably, the admissions which it caused having risen from 790 in 1893 to 1061 in 1897, when 11 Europeans and eight natives were invalided on account of it. In the section dealing with mortality no fewer than 25 deaths are ascribed to venereal disease, amongst the fatal causes being mentioned acute nephritis and blenorrhagic conjunctivitis (!), but in the latter instance no doubt the fatal affection supervened while the patient was in hospital for his eye complaint. Two cases of leprosy were treated during the year, both occurring in Asiatics. There was one fatal case of tetanus, the subject being a European. 35 white patients suffered from acute rheumatism, and also 16 natives; the disease must have been exceptionally mild as it gave rise to neither death nor invaliding. Three fatal cases of "tropical" dysentery occurred among the European troops. Turning to local diseases some of the entries are rather remarkable. 192 Europeans and 193 Asiatics were admitted to hospital for neuralgia; and for neurasthenia 97 and five respectively. The incidence of epilepsy was more even, the figures in this case being 24 and 22. For delirium tremens the natives show a clean sheet, but the white troops furnished 10 cases, as well as 21 of chronic alcoholism. Insolation and apoplexy were vastly more frequent among the strangers to the climate; but with regard to mental affections there was equilibrium, in either case the admissions numbering 34.

Under the head of respiratory and circulatory diseases are to be found no fewer than 947 cases of palpitation of the heart in Europeans and 1077 in natives. 101 of the former were invalided through it and also 94 natives. In each class there would seem to have been a high mortality ascribed to this symptom. According to an authority whose name is not given palpitation of the heart is but a synonym for beri-beri in an early stage of that little understood affection. Hepatic hyperæmia was treated in 115 Europeans against 19 natives, abscess following 23 times and twice respectively. Finally, venereal diseases (other than syphilis) are, like the major affection, largely on the increase. In 1893 the number of cases treated was 8261; in the year under report it had risen to 10,862.

THE ANNUAL REPORT (1898) OF THE MEDICAL OFFICER OF HEALTH OF LONDON.

I.

WE announced last week that the annual report of the medical officer of health of the Administrative County of London had been published, and we referred to the pregnant remarks that were made therein in regard to the better provision of slaughter-houses in London, and the desirability of a more efficient system of meat inspection being established. We now return to this valuable report, selecting a few more equally important subjects in relation to the well-being of the metropolis.

BACTERIOLOGY AS AN AID TO DIAGNOSIS.

It is interesting to record the fact that the employment of bacteriological methods for the purpose of diagnosis is increasing in London, and Mr. Shirley Murphy writes that it is probable that these methods will in the future be more largely resorted to when doubt may exist as to the precise nature of a malady. Many of the vestries have made arrangements for the bacteriological examination of material from suspected cases of diphtheria and enteric fever. In the case of Westminster the vestry have provided at the town hall an incubator, steriliser, and microscope for the use of medical practitioners.

TRADE AND OTHER NUISANCES.

We are glad to note that a sharp look-out is maintained over trade nuisances, and under this heading, of course, comes the intolerable nuisance attributable to smoke. As will be remembered the smoke nuisance was very offensively in evidence during the year 1898 in particular, when the supply of Welsh coal failed owing to a strike. The London County Council have, we believe, not been backward in reminding authorities of their duties in this matter, and several instances of proceedings in the police-court were instituted with salutary results. Whilst we admit that the coal strike did aggravate the evil, yet we contend that the nuisance existed before, and we believe that we were among the first to point out that the Public Health Act provided a remedy, and that in general this fact was ignored by the authorities. The demand for coal by the Government may likely enough lead to a recrudescence of the evil.

The disposal of refuse has occupied a good deal of the Council's attention. The increasing difficulty, for example, which owners of manure experience in effecting its removal points to the need of this work being undertaken more largely by sanitary authorities with power to charge the owners with the cost of removal and without the need of serving notices in respect of each particular accumulation for which such charge can be made. A report was issued by the Public Health Committee in which it was recommended that steps should be taken with a view to obtaining such an amendment of the law as will give the London sanitary authorities powers of the kind just indicated. The removal of offensive refuse also appears to require further powers, that due to fish offal being under the consideration of the Public Health Committee. Failure properly to remove house refuse was the subject of indictment against some authorities. The Council decided to offer a prize for the best design of a dustcart which would enable house refuse to be removed without causing nuisance. We do not learn from the report whether the Council received any response to this invitation, but it is stated that the results of the Council's efforts to secure a weekly collection of house refuse throughout London by means of the dustcart calling at each house has been attended by considerable success. The medical officer of health concludes that there is room for hope that at no distant time all houses in London will be provided with moveable receptacles and that it will be practicable for the sanitary authorities who will be constituted under the London Government Act of 1899 to institute a daily collection of refuse throughout London and thus by better scavenging to remove one of the conditions which tend to the production of diarrhœal disease. In connexion with the disposal of house refuse it is satisfactory to observe that the method of destruction by fire is gradually being adopted. Destructors are employed and in some cases the waste-heap produced is turned to account.

FLOODING FROM SEWERS AND SEWER VENTILATORS.

The flooding of basements from sewers demands serious attention, for Mr. Shirley Murphy reports that it has again occurred during 1898. In Kensington, for example, the medical officer of health states that in times of heavy rain a main sewer has on many occasions proved inadequate and on one occasion 300 basements are known to have been flooded. Bad reports of this kind have also come from South London, Plumstead, and Charlton. Complaints have also been received respecting the smell that arises from sewer ventilators, and it is very properly suggested that more ventilators should be provided which should be carried up to a considerable height instead of being at the ground level. This provision has resulted in much benefit to the health of the localities concerned.

THE PREPARATION IN LONDON OF FOOD FOR SALE.

We are glad to see that the attention of the Council has been directed to the desirability of maintaining wholesome conditions in all places where food is prepared for the purposes of sale. An inquiry was instituted in 1898 by the assistant medical officer, Dr. W. H. Hamer, on which occasion he visited the premises of ice-cream vendors, manufacturers of Polish or Russian cheese, and butchers and sausage-makers, as well as certain restaurants, eating-houses, and fried-fish and eel-pie shops. The report showed the need for sanitary authorities to be empowered to require that food shall be kept under conditions which do not expose it to risk of contamination. In the matter of ice-cream there are grounds for justifying a claim for more complete control than in the case of other articles of food. We have repeatedly urged this fact upon the attention of sanitary authorities ever since the awful disclosures of THE LANCET Sanitary Commission in 1879 on the condition of the Italian quarter in Clerkenwell.[1] There can be little doubt that could this power be obtained we should hear little more of cases of poisoning by ice-cream. We have in particular urged that all ice-cream makers should be registered and their premises inspected from time to time with a view to control the environment, and we learn that where this has been done the results have been very satisfactory.

DISINFECTION.

A very important inquiry was made during the past official year by Dr. C. W. F. Young as to the provision of apparatus for disinfection and the methods of disinfection practised in the London sanitary districts and his report appears at length in the appendix. There are instances where the disinfecting equipment cannot be considered as satisfactory. In several districts the use of formaldehyde for the disinfection of rooms has superseded the use of sulphur dioxide. According to the medical officer of health of the Strand District formic aldehyde as a gas or in the form of spray gives the best results for room disinfection and he recommends its use in his district. In the large majority of London districts, however, the use of sulphur dioxide is depended on, chlorine being only exceptionally employed.

WATER-SUPPLY.

Several accounts of the failure of constant supply of water from August to the early part of December were contributed by the medical officers of health of the districts supplied by the East London Waterworks Company, but notwithstanding the conditions produced by the insufficiency of the water-supply it does not appear that the medical officers of health associate increased mortality with this insufficiency. The resolutions adopted by the Council in regard to the future supply of London are embodied in this section of Mr. Shirley Murphy's report, and now that the report of the Royal Commission on Water-supply has at length been issued it will be interesting to see what attitude the Council will adopt in regard to their proposal to augment the water-supply from a watershed in Wales. The Royal Commission, it may be noted, while seeing something attractive in the scheme of bringing water from the Welsh mountains, deem the expense of such an undertaking to rule the proposal out of court. But they add the curious remark that "one would be glad if it were possible now to secure a watershed to be used hereafter if London should require it."

[1] THE LANCET, Oct. 18th, 1879. p. 580.

THE PLAGUE AT KOLOBOVKA IN 1899.

So little has up to the present time been published concerning the outbreak of plague at the mouths of the Volga in the summer of last year that a paper describing in full detail the principal features of the outbreak is unusually welcome. Such a paper has recently been published by Professor A. M. Levin,[1] who was among the first group of medical men who investigated the epidemic on behalf of the Russian Imperial Plague Commission. Though Dr. Levin did not reach the scene of the outbreak until it was nearly over and was only enabled to see three cases of the disease, he succeeded in obtaining a sufficiently complete account of the preceding cases to admit of his reconstructing the story of the epidemic from beginning to end. The following are the principal facts which his inquiries brought to light.

Kolobovka, the scene of the outbreak, is a village in the Tsaref *ujezd*, or district, of the government of Astrakhan. It lies on the raised left bank of the river Akhtuba, the principal easterly mouth of the Volga. It contains some 457 *dvors*, or courtyards, round which the dwellings are built, and a population estimated at about 3500 souls. The people are Great Russians, members of the Orthodox or Eastern Church, and are occupied principally in agriculture and sheep-rearing. The fields belonging to the peasants here are mostly situated in the steppes at a considerable distance from the village; and consequently during the season of field work all the able-bodied inhabitants—both male and female—go out into the steppes, where they live for the time in small huts or *izbushki*. Some of these are built half underground, and they are scattered irregularly over the steppes at considerable distances from each other. In the meantime the village is left with only the old, the sick, and the children for its population—with the exception that every few days the villagers at work in the steppes pay a brief visit to their homes in the village—principally, apparently, to obtain food supplies.

Up to July 16th (28th) of last year the health of Kolobovka appeared to be quite normal. There was no unusual mortality and no signs of the presence of any infectious disease. But on the date named a deaf-and-dumb woman, named Maria Semakina, aged 35 years, while at work in the fields fell ill with fever and cough and expectoration of blood. She was brought back to the village and died there on July 21st (August 2nd). It was not until the 27th of July that a medical man visited the village and consequently there is some uncertainty about the succeeding cases; but it was gathered that on the day following this first death the woman who kept the house where Maria Semakina lived also fell ill with fever and spitting of blood. She died on July 25th (August 6th). On that day her son developed the same symptoms, with the addition of pain in the chest, and died in less than 24 hours after their onset. In the meantime other persons had been attacked with the disease, but all were either relations of the first patient or had attended her funeral. Thus on July 22nd (the dates henceforth mentioned are all according to the Old Style) an old man of 70 years of age was attacked with fever, vomiting, pains in the chest, and spitting of blood, and died on the 25th. Four other persons sickened on the 25th, 26th, 26th, and 30th of the month respectively, and all with practically the same symptoms. All these patients were of comparatively advanced years—a fact no doubt due to the absence of the younger villagers for the reasons explained above.

In all 24 persons were attacked with the disease and no less than 23 died from it. The case-mortality was therefore 96 per cent.—a figure so high that, as it is pointed out, it alone seemed to point to a diagnosis of plague, few, if any, other diseases presenting so high a degree of fatality. The rapidity of its course was equally striking. Of the 23 deaths, six occurred on the first day of illness, three on the second, nine on the third, three on the fourth, and two on the fifth. The most prominent symptoms pointed to a severe lung affection. The patients complained of pain in the chest, cough, and expectoration containing a good deal of blood. The sputa are described as "watery-mucous," and as coming up in large quantity and with great ease. On examining the chest it was usually found that a few scattered dry or moist sounds could be heard, and only in a few cases were crepitations present and these were unaccompanied by any notable dulness. Dr. Levin, who was a member of the first Russian Plague Commission sent to India and had seen many cases of pneumonic plague in Bombay, found that the symptoms presented by the patients in Kolobovka were identical with those of the pneumonic plague patients seen by him in the Indian city. The other principal symptoms were fever, marked mental disturbance, a white, furred tongue, rapid pulse, and in a few cases petechiæ on the skin. The petechiæ differed from those of typhus fever in being of a darker and more purple colour than those met with in that disease.

While the large majority of the patients developed the disease in its pneumonic form, in a few the disease appeared in its primary bubonic form. One had a "bubo in the right groin," another a "very tender enlarged gland in the right axilla," and a third a "rather tender swelling in the right groin and enlargement of cervical glands." Apparently these were the only three cases of bubonic plague, and the remainder, 21 in number, suffered from the pneumonic variety of plague. The diagnosis was confirmed by the isolation from the tissues of some of the later patients of bacilli which gave all the reactions of Kitasato's plague micro-organism. The laboratory experiments to identify the bacillus were carried out partly in Astrakhan and partly in Fort Alexander I.—the island near Cronstadt which, as already described in the columns of THE LANCET,[2] has been converted into a laboratory for the preparation of plague antitoxin.

The origin of this outbreak of plague has not as yet been satisfactorily explained and its explanation is surrounded by almost insuperable difficulties. Just as was the case in Oporto, in Alexandria, in Mauritius, in Madagascar, in Bombay, and, indeed, almost in every place to which plague has spread in recent years, no direct importation of infection from a pre-existing focus of the disease could be traced. Kolobovka lies on a high road upon which there is a pretty lively traffic to and fro between the delta of the Volga and the town of Tsaritsyn further up the river. Among the people constantly travelling on this road are many Persians and Persian Tatars who every year come in large numbers from Enzeli to Astrakhan to seek work. Some years ago plague was endemic in Persia, but nothing has been heard of the disease there for the past 15 or 20 years. Dr. Levin has made an alternative suggestion as to the origin of the infection. Kolobovka, he points out, lies in the Kalmuck steppes, which extend from the left bank of the Volga to the Ural river. The steppes are inhabited principally by Lamaite Kalmucks, whose praying-places can be seen at intervals on the banks of the Volga. From private letters from the Russian consul-general in Ourga, in northern Mongolia, it was ascertained that among the pilgrims who yearly visit the Buddhist shrines in northern and north-eastern Mongolia are a considerable number of Kalmucks from these very steppes between the Volga river and the Ural river. There is a well-known endemic centre of plague in eastern Mongolia. May not, it is asked, some Kalmuck pilgrims returning from that country have brought with them the infective material of plague? It is impossible here to discuss in full the considerations which favour (or the reverse) this view as to the origin of the Kolobovka outbreak. It can scarcely, however, fail to strike the reader that there are very great difficulties in accepting this explanation. The plague centre in Mongolia is removed from the Volga river by some 70 degrees of longitude—a distance which may be roughly estimated at about 4000 miles. The journey from the one to the other would of necessity occupy many months, and it is not easy to understand why the plague infection, after being carried over that long distance, should have attacked, not the Kalmuck pilgrims themselves or their relations, but the Christian population of a Russian village. A more plausible explanation, though one still fraught with many difficulties, might be found in the importation of infection from Russian Central Asia, where a very severe outbreak of plague occurred in the late summer and autumn of 1898. The village of Anzob, the chief centre of that outbreak, is scarcely more than 1000 miles from Kolobovka, and there is a pretty constant traffic of persons from that part of Russian Central Asia to Astrakhan and the Volga provinces. No proof, however, of such a method of

[1] Vratch, 1899, No. 49, p. 1441

[2] THE LANCET Sept. 16th, 1899, p. 811.

transportation of infection is forthcoming, and any explanation of the sort must for the present rest entirely on somewhat fruitless speculation.

To return to the facts of the Kolobovka outbreak, it is stated that no mortality among rats or other rodents was observed in connexion with it. An experienced veterinary surgeon, Mr. Tartanovski, was specially deputed to investigate the matter, and though he examined over 3000 bodies of small rodent animals he found no traces of suspicious disease in any of them.

The measures undertaken to check the epidemic were of a radical character. The whole village was surrounded by a cordon, which included also the steppes in the neighbourhood. The circle had a circumference of about 135 versts or 90 miles. The cordon was at first kept by the local inhabitants, but later by Cossack troops. The village was divided into sections and twice daily a house-to-house visitation was made in each section. All patients found were removed to hospital and the "contacts" segregated in another building specially set aside for them. The hut in which the case had occurred was closed and it and the earth round it were drenched with lime. Formalin and carbolic acid were also largely employed as disinfectants and the extent to which they were used may be gathered from the statement that as many as 700 litres of formalin and 150 poods (equivalent to about 6000 pounds) of carbolic acid were got through before the epidemic was over. Inoculation with Haffkine's prophylactic was freely offered to the villagers, and though nothing in the way of persuasion or threats was used some 4000 persons were voluntarily inoculated in the course of two weeks, including the medical, nursing, and disinfecting staffs. This practically represented the entire population of the village and of the neighbouring steppes, with the exception of some 40 persons who either declined or who were advised not to undergo the operation on account of their age or health. It would have been interesting to know whether this inoculation of the entire community was the principal cause of, or a decisive factor in, the extinction of the epidemic, but upon this point the article under notice throws no light.

THE WAR IN SOUTH AFRICA.

THE eyes of English-speaking people are all turned in the direction of their thoughts, and their thoughts, it is needless to say, are focussed on the dramatic events now taking place in a limited part of Natal. General Buller has devised a new and bold strategical scheme for the relief of Ladysmith. His forces are now on a march from which there is "no turning back"; their progress so far has been slow but sure, and we must be content to possess our souls in patience and await further developments. There is no concealing the fact, however, that news of the attack on Spion Kop is awaited with keen anxiety. At the time of writing the bare fact of the position having been captured has reached London, and we are in ignorance both of the cost of our victory and of its probable results.

We are glad to notice the change of tone which is taking place in the press and among the people generally in regard to the Government and the military authorities. Miscalculations and mistakes have, no doubt, occurred in the course of this campaign and it is quite right and fitting that everything connected with the war should hereafter be reviewed and subjected to the strictest criticism, but it strikes us as neither just nor generous to do this at the present moment on very incomplete information or to shut our eyes to the extreme difficulties which have had to be encountered or to the great and successful efforts that have been made to overcome them. After all, it may be truthfully affirmed that never before have 120,000 troops been transported in the same space of time to a destination some 6000 or 7000 miles distant from this country; there is no other Power in the world which could have accomplished it. Never before has an army been so well furnished and equipped with all the requirements of field service. We have only to compare the present expedition with those of other countries or with any previous expedition from this island to recognise the contrast, so striking and remarkable has it been. Not only had the Boers matured all their plans and selected their own time for declaring war at two days' notice, but the great extent and the geographical and topographical obstacles of a country, every inch of which was well known to them, have to be borne in mind; and the Boers had, moreover, the best and most ubiquitous intelligence department in the world at their disposal—namely, spies and people friendly to their cause distributed everywhere. Even many of our hired sick-bearers in the field deserted to the enemy. As to any attempt at a military surprise on our part it was merely a farce and a pantomime, for it almost invariably turned out that, instead of being surprised, our foes had, on the contrary, carefully prepared some trap or ambush to surprise us, and we had consequently to buy our experience of Boer tactics and wariness at a heavy cost. But the great difficulty, after all, which had to be surmounted in this campaign was the military situation which existed in South Africa at the time of the arrival of our reinforcements there and the emergent political necessity which this created—namely, the relief of besieged British garrisons. The British generals and troops found themselves, too, face to face with new and hitherto unprecedented conditions of warfare. We feel confident that a calm and impartial consideration of all the circumstances will bring about a very different view to that which now apparently obtains and to which our checks and want of success have hitherto given rise. It is no doubt the consciousness of all this on the part of the Government that causes the Cabinet to hail the opening of Parliament with gladness. It is easy enough to be wise after the event. The Government were blamed not long ago for doing too much and for driving the Boers into war, whereas it is now blamed for not having acted with sufficient promptitude and for not having done half enough when it did act.

Troops in large numbers, field batteries, and hospital ships are arriving at the Cape or are being sent out from this country, and large batches of sick and wounded are returning from the scene of war and being forwarded on arrival to Netley, where every preparation has been made for their reception. In addition to the arrangements that have been made at our large military stations, proffers of hospital accommodation for our wounded and convalescent officers and soldiers are being made to the War Office from all sides. If there is some abatement (for which we confess we are not at all sorry) of enthusiasm in the "send off" of troops from this country there is no sign of it in our colonies, for at Winnipeg, Montreal, Halifax, Sydney, Melbourne, and Adelaide the embarkation of troops gives rise to great popular excitement.

The Secretary for War has accepted the offer of Mr. Van Alen (an American gentleman now resident in London) to provide a section of a field hospital, complete in every respect, for service in South Africa under the medical superintendence of Captain E. Powell, R.A.M.C. A hospital for the Imperial Yeomanry is being fitted out and all appointments on its medical and surgical staff have been already filled up. These include Dr. John Wichenford Washbourn (physician and lecturer at Guy's Hospital and physician to the London Fever Hospital), Mr. Raymond Johnson (assistant surgeon to University College Hospital and to the Victoria Hospital for Children), and Mr. F. Newland-Pedley (senior dental surgeon to Guy's Hospital and lecturer on dental surgery in the Guy's Hospital Dental School).

The Portland Hospital, which arrived at Cape Town on Dec. 26th, forms an independent section of No. 3 Hospital at Rondebosch and is in complete working order. It is very gratifying to read that the staff of the hospital have received great help from the principal medical officer and everyone connected with the Royal Army Medical Corps, and that no difficulties of any sort have arisen. The labours of the medical corps in the field, along the lines of communication, at railway junction depôts, and at base hospitals are very arduous, and the fearless conduct of medical officers in aiding and bringing away the wounded from the firing line at the various battlefields is, we read, "in everyone's mouth."

The reported casualties in the various forces which are now on the march or fighting their way towards Ladysmith have not so far been large considering the numbers engaged and the severity of the fighting, but these must, it is feared, reach a very much higher number when the more strongly held positions and lines of entrenchments held by the Boers have to be attacked and taken. We are writing before information has reached us concerning the

cost of capturing Spion Kop. The fighting columns are accompanied by strong parties of hired stretcher-bearers as a supplementary aid to the regularly organised bearer columns, field hospital transport, and usual field hospital equipment. The garrison of Ladysmith have not only held out nobly but they have exhibited conspicuous boldness and enterprise in their various successful encounters with the besieging forces. The sick-rate and death-rate—mainly from enteric fever and dysentery—which have not been high, are nevertheless mounting up and are bound to do so under the conditions obtaining at Ladysmith, and the relief of the garrison is therefore becoming a matter of urgent necessity. Although the occupation of Ladysmith has exercised a very unfortunate influence on the intended conduct of the campaign it was, nevertheless, unavoidable under the circumstances, and from another point of view it must not be forgotten that General White's troops have performed a signal service in having occupied the Boers and defeated all their attacks and in that way delayed and completely frustrated any intention they may have had to get to the south-eastern seaboard, where their presence in force might have had a very serious and damaging effect upon British troops disembarking at Durban. It seems to our non-military mind that, after all, the greatest source of embarrassment, loss of life, and casualties has arisen from Kimberley, and our attempts (which have so far proved futile) to relieve it. It is astonishing how little we seem to know of the strength of the Boer forces in the field, of their casualties in their various engagements with us, or of their losses by sickness. Their "censorship" at any rate is uncommonly strict.

ITALY AND OUR SOUTH AFRICAN WOUNDED.

Our Rome correspondent writes under date Jan. 22nd:—"To the steadily lengthening list of Italian hotels whose proprietors announce their alacrity to receive gratuitously or at a nominal charge those of the wounded British officers in South Africa who would fain pass their convalescent period in Italy's genial lake country or on her sunny seaboard I can add the 'Albergo delle Sirene' at Porto d'Anzio on the Latin shore. Signor Tommassetti, its proprietor, has just intimated to the British Government that it may freely use his commodious establishment for the purpose indicated, and I am sure the kindly offer will be accepted in the same spirit in which it is tendered. The rigours of a northern winter or the vicissitudes of a northern spring, trying even for the healthy, must be especially so to the convalescent from wounds received on the battlefield or from sickness contracted during service in the open, and nowhere could exemption from such adverse climatic conditions be more completely secured than on that lovely stretch of coast where, as we learn from Cicero and the Younger Pliny, the Roman patrician delighted to make his *villeggiatura*. The combination of sea air wafted shorewards from the blue rollers of the Mediterranean with the sun-tempered breezes from the Alban and Volscian hill-country is delightfully reinforced or mollified by the exhalation from the pine woods and the laurel groves which line the coast or extend inland, while the surrounding associations or impressions, historic or artistic, are of themselves fitted to be a salutary 'alterative' to those of the South Africa 'veldt' or 'kopje,' redolent of a bogus, if militant, Puritanism. But not more welcome can such an improvised 'sanatorium' be to the wounded or invalided officer than the kindly, hospitable spirit which proffers it must prove to the nationality thus favoured—target, as the said nationality has been, and still is, for every missile (spoken, written, or engraved) which foreign envy, hatred, and uncharitableness have at command. Italy, to her honour be it said, is the most considerable among that minority of European Powers which judges British intervention in South Africa with a 'benevolent neutrality,' and when the present war shall have reached its inevitably triumphant issue for the forces of constitutional right and economic prosperity her attitude will be remembered—not to her disadvantage—in common with that of Denmark, of Norway, and of Greece. Even as it is she is reaping the fruit of her chivalrously courteous, aye, of her cordially sympathetic, conduct. We do not read of English ladies alighting at an Italian hotel and having to leave that very day after finding the *salle de lecture* littered with journals caricaturing, with equal coarseness and malignity, the person of the most venerable and esteemed of European monarchs. Such incidents are reported to me from the Alpes Maritimes which have their reward in seeing the victim of such base insults choose the Ligurian Riviera for her vernal *villeggiatura*, and in so doing attract to the many delightful health resorts on that favoured seaboard those English-speaking guests whose patronage their French rivals can so little spare. Not only so, but much further south Italy will profit at the expense of her supercilious neighbour as hostess to the Anglo-American world. From Malta I learn that arrangements are on foot for the reception of H.R.H. the Prince of Wales when his contemplated yachting cruise in the Mediterranean will take him to that island, whence, I am further informed, His Royal Highness will touch at Cività Vecchia *en route* to Rome to witness the Easter ceremonies specially ordered for the Holy Year. All this, I repeat, is already the subject of envious anticipation and bitter comment in French journals; while Italy will show her appreciation of the attention her kindly attitude evokes by doing her best to retain the preference now being vouchsafed to her, and so increasing her attractions or minimising her deterrents for the English-speaking world as to convert an occasional into a permanent—and that an increasingly profitable—*clientèle*."

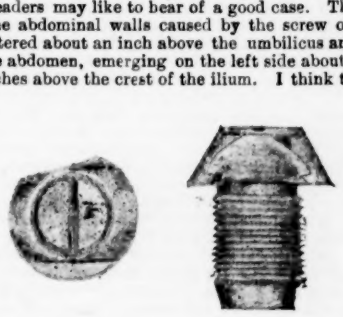
AN AMERICAN SURGEON'S SYMPATHY FOR ENGLAND.

A former American pupil of St. Bartholomew's Hospital writes from near Chicago to one of his old teachers to say that in order to show his good will and his appreciation of the many favours and advantages received from friends while in England he will be pleased to serve in the capacity of surgeon or assistant surgeon during the war in South Africa. He will be ready, at six hours notice, to go as an American volunteer, take the oath of allegiance, or become a British subject, and serve anywhere under the Union Jack that duty needs or generals direct. He would consider such an appointment the greatest honour of his life.

(FROM OUR SPECIAL CORRESPONDENT AT THE BASE.)

With the exception of the facts that all cases are progressing favourably and that several are being sent home in the *Dunera* and other transports my news this week is of the scantiest. No. 4 General Hospital has been ordered off to the Natal side and will probably go to Estcourt, where later, and I dare say before you get this, the services of its staff will be required. The Portland Hospital arrived in the *Majestic* on Friday night, Dec. 29th, and is to be established, so we hear, at Rondebosch, thus adding to the accommodation already here—for Rondebosch is only a very short distance from Wynberg. We are gradually drafting off the convalescents and getting the wards ready again for the reception of cases that will be coming down—probably in a few days. A new operating room is being built for the use of the officers' hospital, so that will obviate the necessity of performing operations in the building, and be a great convenience to everyone concerned.

Your readers may like to hear of a good case. The wound was of the abdominal walls caused by the screw of a shell which entered about an inch above the umbilicus and passed round the abdomen, emerging on the left side about one and a half inches above the crest of the ilium. I think there was



little doubt but that the missile entered the cavity of the abdomen and emerged again almost immediately at the exit wound, but with the exception of a considerable amount of shock the patient (an officer) has made an uninterrupted recovery. I append a rough drawing of the screw. There was no local peritonitis in this case.

We shall have a large consignment of wounded officers to send home in the *Princess of Wales*, the arrival of which here

is daily expected. These, of course, will be the more serious cases that will require a certain amount of dressing on the way and to whom a comfortable hospital ship with all necessary appliances and nursing will be a necessity. At present in both hospitals here there are about 750 sick and wounded, some of whom of course will soon be fit for duty again, but others will have to go to Netley. This does not include the patients in No. 3 General Hospital at Rondebosch. Arrangements have been made by the Red Cross Society for convalescent officers to be accommodated at the Mount Nelson Hotel, which is a fine building situated on the high ground above Cape Town. This of course lessens the tedium of a prolonged convalescence, and as the "cuisine" and internal arrangements are much more perfect and up to date than can be given them in hospital it is a great boon and is much appreciated. The strain that has been thrown on our hospital accommodation for so large a number of wounded officers has been very great, yet I am happy to say that, with a few exceptions, all have expressed themselves as being well pleased with the provision made for them. Of course it should be borne in mind that the accommodation and equipment of even a general hospital will not bear the influx of three times as many wounded officers as the regulations provide for, but up to the present time we have met the rush, and the fact that we have had so far only two fatalities out of nearly 100 officers treated speaks for itself. I may add that both the fatal cases referred to were in a very critical state when they were received. All the wounded Boers, with the exception of one in whom it was necessary to amputate the thigh for extensive disorganisation of the knee-joint, have left hospital, and I believe are at present on their way to St. Helena, where they will be out of harm's way and be well looked after. The ambulance trains have gone up country again, and as they are the "stormy petrels" we must be prepared for more work at any moment.

Wynberg, Jan. 3rd.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6729 births and 5552 deaths were registered during the week ending Jan. 20th. The annual rate of mortality in these towns, which had been 30·9 and 29·1 per 1000 in the two preceding weeks, further declined to 24·9 last week. In London the rate was 26·9 per 1000, while it averaged 23·7 in the 32 provincial towns. The lowest death-rates in these towns were 11·2 in Oldham, 14·5 in Cardiff, 15·3 in Plymouth, and 17·0 in Huddersfield; the highest rates were 30·4 in Sunderland, 31·8 in Norwich, 32·0 in Liverpool, and 32·2 in Nottingham. The 5552 deaths in these towns included 443 which were referred to the principal zymotic diseases, against 506 and 453 in the two preceding weeks; of these 121 resulted from measles, 115 from whooping-cough, 96 from diphtheria, 39 from "fever" (principally enteric), 35 from scarlet fever, 35 from diarrhœa, and two from small-pox. No fatal case of any of these diseases occurred last week in Derby; in other towns they caused the lowest death-rates in Croydon, Plymouth, Swansea, Huddersfield, and Gateshead, and the highest rates in Wolverhampton, Liverpool, Blackburn, Preston, and Sheffield. The greatest mortality from measles occurred in Wolverhampton, Salford, Preston, Sheffield, and Hull; from scarlet fever in Preston and Halifax; and from whooping-cough in Portsmouth, Liverpool, Bolton, Salford, and Newcastle. The mortality from diarrhœa and from "fever" showed no marked excess in any of the large towns. The 96 deaths from diphtheria included 40 in London, 14 in Sheffield, eight in Liverpool, five in Leeds, and four in Manchester. One fatal case of small-pox was registered last week in Liverpool, and one in Hull, but not one in any other of the 33 large towns. There were 21 cases of small-pox under treatment in the Metropolitan Asylums Hospitals on Saturday last, Jan. 20th, against numbers increasing from five to 18 at the end of the four preceding weeks; five new cases were admitted during the week, against two, one, and 10 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2441, against numbers decreasing from 3578 to 2560 on the nine preceding Saturdays; 208 new cases were admitted during the week, against 161, 186, and 180 in the three preceding weeks. Influenza was certified as the primary cause of 208 deaths in London last week. The deaths referred to diseases of the respiratory organs in London, which had been 1221 and 994 in the two preceding weeks, further declined to 728 last week, but were 41 above the corrected average. The causes of 84, or 1·5 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Plymouth, Cardiff, Nottingham, Oldham, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Burnley, Preston, Halifax, Sheffield, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 25·6 and 23·0 per 1000 in the two preceding weeks, rose again to 23·3 during the week ending Jan. 20th, but was 1·6 per 1000 below the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 19·3 in Paisley and 21·7 in Dundee to 26·6 in Greenock and 27·0 in Perth. The 721 deaths in these towns included 32 from measles, eight from scarlet fever, eight from whooping-cough, seven from diphtheria, seven from diarrhœa, and six from "fever." In all 68 deaths resulted from these principal zymotic diseases, against 64 and 65 in the two preceding weeks. These 68 deaths were equal to an annual rate of 2·2 per 1000, which was 0·2 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of measles, which had decreased from 37 to 20 in the four preceding weeks, rose again to 32 last week, and included 19 in Glasgow, eight in Dundee, and four in Paisley. The deaths from scarlet fever, which had declined from eight to four in the four preceding weeks, rose again last week to eight, of which four occurred in Glasgow and three in Edinburgh. The fatal cases of whooping-cough, which had been nine and 14 in the two preceding weeks, declined again to eight last week, and included four in Glasgow and two in Perth. The deaths from diphtheria, which had been three and five in the two preceding weeks, further rose last week to seven, of which three were registered in Glasgow and two in Edinburgh. The seven fatal cases of diarrhœa showed a marked decline from recent weekly numbers and included three in Glasgow and two in Dundee. The deaths referred to different forms of "fever," which had been two and six in the two preceding weeks, were again six last week, of which three occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had declined from 253 to 203 in the three preceding weeks, further fell to 198 last week, but were 45 above the number in the corresponding period of last year. The causes of 27, or nearly 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 50·3 and 49·4 per 1000 in the two preceding weeks, further declined to 44·0 during the week ending Jan. 20th. During the past four weeks the death-rate in the city has averaged 46·4 per 1000, the rate during the same period being 33·1 in London and 23·1 in Edinburgh. The 295 deaths registered in Dublin during the week under notice were 36 below the number in the preceding week, and included 22 which were referred to the principal zymotic diseases, against 18 and 31 in the two preceding weeks; of these nine resulted from measles, six from diarrhœa, three from whooping-cough, two from diphtheria, two from "fever," and not one either from small-pox or from scarlet fever. These 22 deaths were equal to an annual rate of 3·3 per 1000, the zymotic death-rate during the same period being 1·7 in London and 1·4 in Edinburgh. The deaths referred to measles, which had been 10 and 18 in the two preceding weeks, declined again last week to 9. The fatal cases of diarrhœa, which had been one, two, and three in the three preceding weeks, further rose to six last week. The deaths from whooping-cough, which had decreased from three to one in the five preceding weeks, rose again last week to three. The two deaths from diphtheria showed a decline from the number in the preceding week. The deaths referred to different forms of "fever," which had been five in each of the two preceding weeks, declined to two last week. The 295 deaths in Dublin last week included 31 of infants under one year and 105 of persons

aged upwards of 60 years; the deaths both of infants and of elderly persons showed a decline from the numbers recorded in the preceding week. Seven inquest cases and five deaths from violence were registered, and 98, or nearly a third, of the deaths occurred in public institutions. The causes of six, or more than 2 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

DEPUTY Inspector-General of Hospitals and Fleets James Hamilton Martin, D.S O., has been promoted to the rank of Inspector-General of Hospitals and Fleets in Her Majesty's Fleet. The undermentioned Fleet Surgeons have been promoted to the rank of Deputy Inspector-General of Hospitals and Fleets in Her Majesty's Fleet:—Gerard James Irvine and Henry Thompson Cox. The undermentioned Staff Surgeons have been promoted to the rank of Fleet Surgeon in Her Majesty's Fleet:—Richard Edmund Biddulph, Gilbert Kirker, William Tait, and Joseph Crowley.

The following appointments are announced:—Staff Surgeons: William J. Colborne to the *President* for Medical Department; Henry B. Beatty to the *Gladiator* and afterwards to the *Royal Arthur*, for the *Katoomba* and for medical charge at Sydney Reserve Depôt; and E. R. D. Fasken to the *Medusa*. Surgeon: J. McElwee to the *Boscawen* for the *Agincourt*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel J. R. Greenhill, A.M.S., assumes medical charge of the Station Hospital, Gosport. Major D. Stiell proceeds to Woolwich for temporary duty. Captain P. H. Whiston is appointed to the Medical Staff in the Home District. Lieutenant G. J. S. Archer proceeds to Woolwich for duty with No. 5. Stationary Hospital.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major Edward Cureton resigns his commission. Surgeon-Captain T. Tinley, 1st East Riding of Yorkshire Volunteer Artillery, to be Surgeon-Major.

VOLUNTEER CORPS.

Artillery: 1st Edinburgh (City): Surgeon-Lieutenant-Colonel J. J. K. Duncanson resigns his commission, with permission to retain his rank and to wear the uniform of the corps on his retirement. 1st Forfarshire: Horace Crakanthorp Colman to be Surgeon-Lieutenant. 1st Norfolk (Eastern Division, Royal Garrison Artillery): John Charles Reynolds Robinson to be Surgeon-Lieutenant. *Royal Engineers:* 1st London: John Charles Jackson to be Surgeon-Lieutenant. *Rifle:* 19th Middlesex: Surgeon-Lieutenant M. Richards resigns his commission.

TRANSVAAL WAR NOTES.

Princess Christian has signified her willingness to become honorary president of a fund the object of which is to collect subscriptions for providing comforts for non-commissioned officers and men of the Royal Army Medical Corps. The following ladies will act on the committee of this fund: Viscountess Knutsford, Lady Wantage, Lady Rothschild, Lady White, Lady Mac Cormac, Lady Coventry, Lady (Douglas) Powell, Lady Duckworth, Lady Brunton, Lady Broadbent, Mrs. Pye-Smith, Mrs. Pearce Gould, Mrs. Clutton, Mrs. Percy Kidd, Mrs. Reynolds Ray, Mrs. Dawson Williams, Mrs. T. Bryant, Mrs. T. Barlow, Mrs. Goodhart, Mrs. Hale White, Mrs. Walsham, Mrs. F. Taylor, Mrs. David Lees, Mrs. Fripp, Mrs. Vesey Holt, Mrs. Charters Symonds, Mrs. Jameson, Mrs. Muir, Mrs. Johnson, Mrs. McPherson, Mrs. J. B. C. Reade, Mrs. J. B. Hamilton, Mrs. Charlton, Mrs. C. White, Mrs. John Anderson, and Mrs. Bourke. Miss Maxwell-Müller, late lady superintendent in the Indian Nursing Service, will act as honorary secretary and will receive subscriptions and donations at the office of the fund, 100, Victoria-street, S.W.

Mr. J. Paul Bush, honorary surgeon to the Bristol Royal Infirmary and senior surgeon to the Bristol Constabulary, has been appointed senior civil surgeon to the Princess Christian Hospital now being fitted for service with the troops in South Africa and will be leaving about the middle of February.

The Queen has sent £100 to the committee of the Imperial Yeomanry Hospital for the purpose of equipping two beds.

The *Times* says: "The recent gifts to the Permanent Homes for Discharged Soldiers which the building trades propose to erect on the site presented by Lord Pirbright include the following: Lord Penrhyn (Penrhyn Quarries), 10,000 slates; Mr. Assheton Smith (Dinorwic Quarries), 10,000 slates; Messrs. George Trollope and Sons, doors, casements, and linings for one home; Messrs. T. and W. Farmiloe, the entire white lead, colour, oils, varnish, &c., for the homes; Messrs. G. B. Kent and Sons, the entire paint, toilet, &c., brushes; Messrs. Carter and Aynesley, the whole of the locks; the Mural Decoration Company, 500 yards of partitions; Mr. F. J. Ebner, the wood-block flooring for the ground floor of three homes; Messrs. D. Anderson and Son and Messrs. J. C. Broadbent and Co. (jointly), the whole of the slag wood; Messrs. Twyfords (Limited), the sanitary fittings for one home. Communications regarding the homes should be addressed to No. 1, Waterloo-place, Pall-mall."

In addition to those mentioned last week the following appointments have been made to the staff of the Imperial Yeomanry Hospital: Dr. Hamilton A. Ballance, assistant surgeon to the Norfolk and Norwich Hospital; Mr. William Turner, assistant surgeon to the Westminster Hospital; Mr. Wallace C. G. Ashdowne, surgical registrar of St. Mary's Hospital; Dr. J. B. Christopherson, demonstrator of anatomy, St. Bartholomew's Hospital; Dr. Andrew Elliot, medical registrar, West London Hospital; and Dr. H. W. Saunders.

The staff of the Langman Hospital is now complete. Mr. Robert O'Callaghan is surgeon-in-chief and Mr. Charles Gibbs, assistant surgeon to Charing-cross Hospital, is surgeon; Mr. H. J. Scharlieb, anæsthetist to University College Hospital, is assistant surgeon and anæsthetist; Dr. Conan Doyle is medical secretary and registrar; and five senior students of University College Hospital are going as surgical dressers. Lieutenant Archie Langman is secretary and treasurer, while Major O'Connor Drury, R.A.M.C., is the army medical officer in command.

Lieutenant-Colonel W. A. May, R.A.M.C., has been appointed principal medical officer, and Major J. W. Jerome, R.A.M.C., medical officer, to the 8th Division for service in South Africa.

A committee of Danish farmers have sent to Her Royal Highness the Princess of Wales 12,000 boxes of butter for distribution among sick British soldiers in South Africa.

We learn that several private villas in Madeira have been placed at the disposal of the War Office for the use of convalescent soldiers.

The Mafeking correspondent of the *Times* in a telegram dated Jan. 3rd says:—"I have interviewed Surgeon-Major Anderson, an Imperial Service officer sent out by the Director of Hospitals to Colonel Baden-Powell's force, who authorises me to say that the wounds inflicted were altogether different to previous experience in Egypt and in India and that it was impossible that they could have been produced by Martini or Mauser bullets, though perhaps they might have been caused by Snider ones, but from a scrutiny of the wounds made while dressing them in hospital here he has no doubt in his own mind that bullets of an explosive character were used by the Boers."

The London County Council having placed the house of the late Sir Spencer Wells at Golder's Hill, Hampstead Heath, at the disposal of a Hampstead committee for the purpose of establishing a convalescent home for wounded soldiers, an appeal has been made to the residents of Hampstead for £1000 to equip Golder's Hill as a convalescent home for the Brigade of Guards and Household Cavalry and place it at the disposal of the military authorities.

The Kent and Essex General Investment Company have offered to the War Office the use of Parrock Hall, Gravesend, rent free, for 12 months, as a home for the sick and wounded from South Africa.

Mr. J. W. Morris has presented a screen to the American Ladies' Hospital Ship Fund. The screen will be raffled for and the entire proceeds will be given to the *Maine* Committee. The screen can be seen free between 10 A.M. and 6 P.M. on other days and from 10 A.M. till 1 P.M. on Saturdays at 17, Berners-street, Oxford-street, W.

DEATHS IN THE SERVICES.

Major Charles Pope Walker, R.A.M.C., at Ladysmith from dysentery, on Jan. 5th, aged 41 years. He entered the medical service of the army as a captain in the Royal Army Medical Corps in 1886 and in 1887 he went to India and was attached to an English regiment serving in Quetta and afterwards in the North-West and Central Provinces.

In 1892 he returned to England and was then attached to the Guards in Ireland. In 1895 he served in the Mauritius, where he remained until 1898, when he went to the Cape and afterwards to Natal. In November, 1899, he proceeded with the troops to the front and had charge of the hospital at Dundee and was present at the battle of Elandslaagte, afterwards retiring with the forces from Dundee to Ladysmith, where he rendered valuable medical services. He obtained the rank of Major in July of last year.

OSMAN DIGNA.

We cannot forbear noticing the reported capture of Osman Digna, whose name has figured so prominently for some time past in connexion with the military history of the Soudan. It appears that he has been in hiding in the hills near Tokar, where he was captured, and that he was taken to Suakim, whence he will be conveyed to Suez by the Government steamer *Behera*. Osman Digna has had a most adventurous life and his name must be well known to all—especially to medical officers and others who took part in the late Anglo-Egyptian military expeditions to the Soudan. That he will be kept in safe custody somewhere goes without saying, but we trust that this precaution will not be inconsistent with his being treated very mercifully now that he can do no further harm. He must be a brave, as he certainly is a remarkable, man.

THE EXTERMINATION OF THE MALARIAL MOSQUITO.

Dr. Cook, health officer, Calcutta, has made a proposition to employ two men to exterminate malarial mosquitoes by using kerosene oil in the pools where they breed.

Correspondence.

"Audi alteram partem."

"SOME POINTS IN THE NATURAL HISTORY OF UTERINE FIBROIDS."

To the Editors of THE LANCET.

SIRS,—I have read with a great deal of interest Dr. Champneys' address on this subject published in THE LANCET of Jan. 20th. There are two points which seem to be especially important. The first is the conclusion that the mortality of fibroids apart from operation is represented by a small decimal—viz., 0·000138 per cent. The evidence adduced in support of this does not seem to me to be quite convincing. This percentage is apparently obtained by finding that the number of female out-patients at St. Bartholomew's Hospital from 1866 to 1898 was 2,160,112 and that in that time only three cases were met with in the post-mortem room in which death occurred from fibroids apart from operation. If I understand the argument rightly, from this Dr. Champneys asks us to conclude that the mortality apart from operation is three in 2,160,112, or 0·000138 per cent. There does not seem to me to be any necessary connexion between the number of fatal cases met with in the post-mortem room and the number of cases of uterine fibroids ending fatally in that large number of female out-patients. As we all know, the life-history of fibroid tumours of the uterus is generally a long one—a matter of many years. A patient with uterine fibroids may attend the out-patient department for a time, may be relieved by medical treatment for a time, and may cease to attend; she may become an in-patient and be relieved by medical treatment and rest, and may go out. If her illness at some subsequent time takes on an acute and dangerous phase from hæmorrhage, sloughing, and septic fever, or from peritonitis with or without intestinal obstruction, *it by no means follows that she will be moved into hospital.* Her condition may be too serious to admit of her being moved, or she may live too far away, and it is therefore quite probable that she may die at home. I would submit that on this account the evidence of the post-mortem room may easily lead to an erroneous conclusion in estimating the mortality of fibroid tumours apart from operation. In the same way, if we seek for the number of patients dying from cancer of the uterus in hospital apart from operation (excluding the Middlesex Hospital, where I believe they are specially allowed to stay till death occurs) we should find that there are practically no deaths from cancer of the uterus, and we might similarly argue that the disease never terminated fatally. In this example we happen to know the reason why such a conclusion would be fallacious—viz., that if nothing can be done by operation to relieve a case of cancer of the uterus, it is not kept in hospital, but goes elsewhere to die. In the case of fibroids we do not know certainly whether there is or is not a fallacy of this kind existing, but the fact that the same line of argument employed in the case of another disease (cancer) leads to a false conclusion should, I think, serve to make us very cautious in accepting the conclusion derived from similar reasoning in the case of fibroid tumours of the uterus. I have myself known one case of uterine fibroid die from hæmorrhage at home—a case that I had promised to take into the hospital, but fatal hæmorrhage occurred before she could be moved.

Fatal cases of ovarian tumour apart from operation are now exceedingly rare, owing, of course, to the fact that cases of ovarian tumour are always operated on nowadays. Fatal cases of ovarian tumour apart from operation therefore hardly ever occur now in the post-mortem room. Here we see again that the evidence of the post-mortem room must not be pressed too far in ascertaining the mortality of a disease. Probably the most serious cases of fibroids are the cases that are most frequently submitted to hysterectomy; thus a whole group comprising the most serious cases is removed from the possibility of figuring in the list of fatal cases of fibroid apart from operation.

I myself fully believe that the mortality of fibroid tumours apart from operation is very low, though the invalidism for which they are responsible is very serious; but it seems to me probable that the mortality is considerably higher than the percentage at which Dr. Champneys has arrived; first, because very probably many cases die at home, and therefore never appear in hospital statistics; secondly, because the cases that would most probably end fatally are the very cases in which hysterectomy is performed; and the subtraction of these cases unduly reduces the number of those classified as fatal cases of fibroid apart from operation.

The second point that seems especially important is the mortality at the present time of abdominal hysterectomy for fibroids. Dr. Champneys' tables of the mortality of this operation collected from five hospitals are most interesting, but to some of us, I venture to think, they will come as a surprise. I am certainly surprised myself to find that in 1896, 1897, and 1898 the mortality of hysterectomy for fibroids at these five hospitals has been 25, 15·5, and 15·9 per cent. Since November, 1896, when I adopted either abdominal pan-hysterectomy from above, or hysterectomy with the intra-peritoneal treatment of the stump according to the method I now follow, I have had 20 consecutive abdominal hysterectomies for uterine fibroids with the loss of only one case, or a mortality of 5 per cent., and there are other gynæcologists whose mortality is as small, or smaller, I believe, even than this.

I am, Sirs, yours faithfully,

Harley-street, W., Jan. 22nd, 1900. ARTHUR H. N. LEWERS.

To the Editors of THE LANCET.

SIRS,—The excellent address under the above title recently delivered by Dr. Champneys, which appears in THE LANCET of Jan. 20th (p. 147), should afford subject for consideration to all thoughtful surgeons in view of the increasing tendency at the present day towards the routine early treatment of uterine fibro-myomata by abdominal hysterectomy. This treatment in cases of uterine growths too large to admit of vaginal myomectomy was strongly advocated in a paper read before the Obstetrical Society of London in the autumn of 1897.[1] In the discussion which followed it I expressed my dissent from the views held by the author of the paper regarding the duty of recommending early operation in all cases of uterine fibro-myomata—a course rightly adopted in the case of ovarian tumours—on the ground that the two diseases are not comparable as regards the necessity for operative interference, since the great majority of benign uterine growths do not tend to imperil life and may never require surgical interference, while ovarian tumours, on the other hand, usually prove fatal unless removed.

Dr. Champneys, after considering by the light of carefully compiled hospital statistics the probable relative frequency

[1] Transactions of the Obstetrical Society of London, vol. xxxix., p. 22.

of uterine fibroid disease and enumerating the symptoms to which it may give rise, proceeds to discuss its mortality under two heads: (1) *as apart from any operative interference;* and (2) *after removal of the uterus by abdominal hysterectomy.* He proves conclusively that death *directly* due to the existence of a uterine fibroid growth is an extremely rare occurrence. With this statement I think the profession will generally concur. In my own experience I have met with but one such instance, in the case of an uncomplicated tumour where death was due to heart-failure from sudden uncontrollable hæmorrhage. With regard to the *operative* mortality of uterine fibroids Dr. Champneys's statistics from various hospital records extending over some 10 years past show an average of 17 deaths per 100 operations, or about one in every six patients submitted to hysterectomy. My own total results in this operation, dating from 1882 and including 107 cases treated with the serre-nœud and 37 by the so-called intra-peritoneal method, show 16 deaths in 144 cases, a mortality of just over 11 per cent. Of these deaths four occurred among my first 10 cases operated on in the early "eighties"; of the 134 abdominal hysterectomies performed since 1886 only 12 have proved fatal, giving a death-rate of 8·9 per cent., which is equal to more than double my average mortality for ovariotomies during the same period.

Feeling as I do with regard to the question of surgical interference with uterine fibroids, I cordially agree with Dr. Champneys's remarks on the ethics of operations. At the present day when surgical procedures of every description are multiplying so rapidly and with such gratifying results, I think it our duty to discriminate between operations undertaken for the preservation of life and those now so freely resorted to for the relief of conditions which do not directly tend to cause death. In the former case the risks of a grave operation are counterbalanced by the certain dangers incurred through the disease, and consequently surgical interference, whether it prove successful or not, may be considered as fully justified. But in cases of simple uterine growths, where life is not directly threatened and the disease causes at most but some discomfort without material impairment of health, resort to operation involving a definite risk to life (a possible consequence of any abdominal section) should never be advocated on the ground that a similar procedure has been followed by success in other like instances. That there is a tendency in the profession at the present day to be thus influenced by series of successful operations is, I think, undoubted; and in the discussion at the Obstetrical Society of London above referred to I ventured to point out that the record of 28 hysterectomies with two deaths (a mortality of over 7 per cent.) was hardly sufficiently conclusive of the benefits of such treatment to warrant the argument advanced by the writer of the paper in favour of the early removal of uncomplicated myomata of the uterus. My views in this direction receive support from the records of the Chelsea Hospital for Women for the years 1897 and 1898, quoted in Dr. Champneys's address — viz., 73 hysterectomies with nine deaths, a mortality of 12 3 per cent.

In THE LANCET of Jan. 13th (p. 99) there appears an abstract of a paper on the "Operative Treatment of Uterine Fibroids" recently read before the Medical Society of London. The author founds his remarks upon 47 cases of abdominal hysterectomy by the intra-peritoneal method with only one death, and states that his list includes a series of 39 consecutive recoveries. He concludes his paper with the sanguine observation that the operation of abdominal hysterectomy with intra-peritoneal treatment of the uterine stump may in the future be confidently expected to give a mortality of not more than 1 or 2 per cent. Not having been present at the reading of this paper, I have no definite knowledge of the nature of the cases operated on and can therefore offer no opinion on the results obtained; but unless the majority of the anticipated operations are to be undertaken in cases which from my point of view do not require any surgical interference, I cannot help fearing that the experiences related hardly justify the expectations expressed for the future. I had myself some years ago a consecutive series of 30 successful hysterectomies with the serre-nœud, and my last 26 patients treated by this method all made good recoveries. But I have learnt by experience that there is a compensating average in most matters, even in surgical results, and I hesitate to draw deductions as to future mortality rates from any series of successes, however tempting may seem to be the outlook.

In conclusion, I would emphasise what I have said elsewhere on a former occasion—viz., that the successful issue of an operation affords no proof that the procedure in question was essential to the welfare of the patient; and I would further point out that a death resulting from any operation with a recognised mortality-rate *if undertaken on insufficient grounds, even though at the special request of the patient,* should be considered by the operator as something worse than a surgical calamity.

I am, Sirs, yours faithfully,

Manchester-square, W., Jan. 22nd, 1900. W. A. MEREDITH.

"SHAW v. THE RAILWAY PASSENGERS' ASSURANCE COMPANY."

To the Editors of THE LANCET.

SIRS,—The prominence which your leading article (Jan. 13th) has given to the case of Shaw v. the Railway Passengers' Assurance Company induces me to offer a few remarks on the subject. In the first place, I would point out that at the time when the pathological examination was made, now more than a year ago, I knew absolutely nothing about the case or the region from which the specimen had been removed, nor had I been informed that legal proceedings were pending. This will explain why the whole specimen was not preserved, but fortunately for me the microscopical section has been discovered and is now in my possession, and I am willing to submit it for an opinion to any competent morbid histologist (not a bacteriologist) in the United Kingdom.

Your article states that the arbitrators had to decide whether the specimen was a blood-clot or a sarcoma. But surely that was not so, for as I was the only person who had examined the specimen microscopically no other witness was in a position to form a reliable opinion. As a matter of fact, the histological appearances were quite characteristic of sarcoma and the specimen presented no difficulty whatever in its recognition. The prolonged cross-examination on the possibilities of organising blood-clot, inflammatory tissue, and the like merely served as the proverbial "red herring." The second question submitted to the arbitrators you have thus expressed: "Did the sarcoma exist prior to the accident?" Now, if the answer had been in the affirmative, then by the "aggravation" clause in the policy the company would not have been liable, but if in the negative then the company would have insisted on proof that the injury had caused the sarcoma, which in the nature of things would not have been forthcoming. The third question which you have suggested is: "Could the growth have attained the size it did in ten weeks?" The substance removed at the necropsy was considered to weigh about one pound, but in this estimate no allowance is made for the admixture with blood from the incision into the tumour which had been made per rectum nor for the effects of degenerative changes and hæmorrhages in the neoplasm. The possible origin of a sarcoma from blood-clot or inflammatory exudation following injury is an interesting subject for pathological inquiry but did not bear on the question which the arbitrators were appointed to decide; and it must be remembered that the injury was received in the left loin while the sarcoma developed deeply within the cavity of the true pelvis. A side issue raised at the trial and made much of by the opposing counsel had reference to the alleged date on which the parcel was received at the laboratory. However, the date of delivery as recorded by the railway company and the date of its receipt as entered at the laboratory are the same (on Monday morning), and it was merely an impression of mine which I had no means of verifying that the parcel arrived late on the previous Saturday evening. The parcel was distinctly labeled with the sender's name and was numbered in the usual manner at the laboratory, so that confusion was quite impossible. Two facts remain. Mr. Shaw received an injury to the loin on Sept. 15th; he died on Nov. 24th from a sarcoma in the pelvis which had obstructed the bowels and urinary passages. The proximate cause of death was disease, and therefore by the terms of the policy the company was unquestionably entitled to the finding of the court.

I am, Sirs, yours faithfully,

St. Thomas's-street, Jan. 23rd, 1900. J. H TARGETT.

"OPERATIONS FOR ACUTE APPENDICITIS."

To the Editors of THE LANCET.

SIRS,—Mr. Berry asks me two questions: (1) at what stage do I operate? and (2) which cases should be operated on without regard to adhesions? Unless the attack is a mild one or apparently passing off, or in a stage at which intervention would be hopeless, I now operate at once. I used to follow Mr. Berry's practice of "waiting for a few days until adhesions to the anterior abdominal wall have formed and then making an incision into the abscess through the area of adherent peritoneum." I found this occasionally meant waiting too long and then devised the operation described in THE LANCET of Jan. 13th. I am surprised that Mr. Berry sees no essential difference between this and the older plan. Perhaps my diagram (Fig. 1. p. 87) may have misled him. It does not, and is not meant to, indicate steps "6" and "7" of the operation (see p. 88). My operation bears the same relation to the usual one that a flank attack does to a frontal one. It ends in opening the abscess cavity in the manner described as "steps 6 and 7." It therefore perforates the peritoneum but does not open the general peritoneal cavity. This operation is indicated when a fixed tumour can be felt in the iliac fossa. When such a tumour is deep and the abdomen tense it may not be discovered until anæsthesia has been obtained. When there is a moveable tumour I open the general peritoneal cavity, afterwards proceeding in the manner described in the latter half of the last paragraph but three on p. 88. The variety of cases of appendicitis is so great that since the publication of that paragraph I have been reminded of one not provided for in it—viz., the case in which "the appendix, in spite of inflammatory thickening, floats free in the peritoneal cavity," while the latter *does* show signs of general infection. Mr. Bott, Dr. Dixson, and I have just had in the Brentford Cottage Hospital a very severe case of this kind. We removed the appendix, dealt with the general peritonitis, chiefly by careful swabbing, and the patient, a boy, aged 14 years, is convalescent. The symptoms had commenced 60 hours before operation. 24 hours more might have been fatal; 24 hours less would, I cannot help thinking, have been safer.

I believe in the proper use of statistics, but they are not required to prove the desirability of saving some of the cases which are now lost under, if not through, a policy of delay. My conversion to these views has been gradual, my putting them into practice recent. Appendicitis is so fatal as it is because it is not nearly so fatal as it might be, and further because so many people base upon a limited personal experience a belief that appendicitis is less fatal, less injurious to health, and less wasteful of time than it really is; and so surgery is kept at a distance as a thing known to be disagreeable and hoped to be unnecessary.

At the risk of being misunderstood, but from a feeling of duty, I will add a warning which I believe Mr. Berry will endorse. Intra-peritoneal operation on the diseased appendix requires a combination of experience with some natural capacity. Every case has its individual peculiarities, some of which may require resource and nerve. The qualities demanded are not to be got by a course of operative surgery on the dead subject even when combined with a course of practical bacteriology.

I am, Sirs, yours faithfully,

Grosvenor-street, W., Jan. 22nd, 1900. C. B. KEETLEY.

"A CASE OF SUPRAPUBIC LITHOTOMY; REMOVAL OF TWO VESICAL CALCULI; RECOVERY."

To the Editors of THE LANCET.

SIRS,—Permit me to thank Dr. W. A. Mackay for the polite language he has used towards me in commenting upon my recent case of suprapubic lithotomy in a young child. I do not quite admit that Dr. Mackay is right in his statement "that the suprapubic operation has proved itself in childhood of all methods the most fatal." Statistics are not everything. Outside the employment of lithotrity in suitable cases no one can be a stronger advocate than myself for lateral lithotomy, but I still adhere to my assertion that in young male children it is not an easy operation, for be it remembered the line of procedure is through structure so diminutive and the space for working so narrow that unless the surgeon uses the utmost care he may possibly come to grief. I have operated by perineal lithotomy upon quite 300 cases of stone in the bladder, of all ages, and, of course, I have lithotrised many as well, so that if I have a bias it would be for lateral lithotomy; but my reason for selecting the high operation in the case reported was that I suspected the stone or stones were not free in the bladder (as was proved), and I know from experience how difficult it often is to remove by the lateral perineal method a stone or stones which are pouched or partly so. I am in accord with Dr. Mackay's opinion that suprapubic lithotomy must not be considered in young male children a routine operation; indeed, it ought to be resorted to as an exceptional operation in exceptional cases.

I am, Sirs, yours faithfully,

Wolverhampton, Jan. 23rd, 1900. T. VINCENT JACKSON.

THE INFLUENCE OF WEATHER ON VACCINE LYMPH.

To the Editors of THE LANCET.

SIRS,—In the issue of THE LANCET of Dec. 30th, 1899, in the *Annus Medicus*, page 1833, col. 1, lines 2 to 15, and at page 1839, in the last 10 lines of the article on "Vaccination in 1899," you treat of the lack of activity of vaccine lymph during hot weather. You mention that you have set an inquiry on foot the results of which will be published shortly. You also say that the difficulty has been met in some countries by suspending vaccination during hot weather and that the remedy will doubtless be found to lie in the preparation of the lymph during the cold weather to be stored for use during the hot months.

Recently Dr. Loir of Tunis supplied a communication to the Academy of Medicine wherein he sought to establish the fact that vaccination should not be performed in hot countries from June to November.[1] Dr. Hervieux, the chief of the vaccination department of the Academy of Medicine, is strongly opposed to this view, as, indeed, I am myself, and as a matter of fact I am writing a paper on this point which Dr. Hervieux will on my behalf lay before the Academy. It occurred to me that as you are making inquiries upon the matter we might help one another: I could assist your inquiry by furnishing you with the details of my work now in progress and you could help me by furnishing me with the results of your inquiry.

At this moment I am able to affirm that if hot weather has any evil influence upon the activity of vaccine lymph this can be met and conquered up to a certain point. The cause, however, of the want of activity in vaccine lymph should be sought for elsewhere than in hot weather. Two matters are more important than the heat of the weather—(1) the influence of the calf and (2) the influence of the inoculating lymph (*semence*). The importance of the rôle played by the calf is obvious from a consideration of the following facts. Let two calves be vaccinated on the same day, at the same time, under the same conditions, and with the same lymph. One of these calves will give excellent vaccine lymph while the other will produce a lymph which is very defective in vaccinal quality. The importance of the rôle played by the lymph is shown as follows. At one vaccine station they had a whole series of defective crops (*récoltes*); several calves were vaccinated, some with the ordinary lymph of the establishment, others with lymph coming from another station. The former lot gave very indifferent lymph, the latter excellent; but what demonstrates anew the influence of the *calf* or of its *surroundings* is the fact that other calves vaccinated with the good lymph collected in this station and originating from lymph sent from the other station gave, after the lymph had passed through some three calves, defective lymph.

Hot weather goes for nothing as regards the failure of the lymph observed during 1899, for (1) failures were not observed everywhere and some stations had excellent crops all the year through; and (2) deficiency in quality was noted in the cold weather as well as in the hot. In one station with which I am personally acquainted there were throughout the year only two defective crops, the one collected on March 13th, the other on July 17th. All the other crops, including those of June, July, and September were of excellent quality. There was no August crop on account of the director of the institute being

[1] THE LANCET, Nov. 4th, 1899, p. 1265.

away and provision was made in July for a supply for August. At the same station during another year there were 20 crops which failed and they were nearly all collected between April and May. At another station which I know, presided over by a bacteriologist who is as well known in England as in France, some two years ago the crops collected in the spring were defective while those collected in the summer were of excellent quality. For these latter results all the calves had been vaccinated with a lymph of exceptionally high power coming from another station.

In the English colony of Natal vaccinations are performed at any time of the year with lymph sent from Europe. I know that during the hot weather a year ago the results were excellent and I should have been informed if the results were not the same in 1899.

It is proposed to store lymph for use in hot weather which has been collected during cold weather. I have lately made some experiments with vaccine lymph collected in April the efficacy of which was perfect at the moment of collection. Here are my results at the end of three days:—

With *Vaccine No. 9*, collected on April 10th, two children were inoculated, two insertions being made in each child. The insertions were made in these and in the following cases by superficial incisions of about one centimetre in length. In the first child there developed from one incision *three* small vesicles. They were badly developed and discrete the one from the other. From the other incision only *two* small vesicles developed. In the second child there were *two* vesicles of the same length as the respective incisions, but with very irregular edges.

With *Vaccine No. 12*, collected on April 17th, two children were inoculated. In the first child there developed from one incision *two* small vesicles. They were badly developed, and discrete the one from another. From the other incision only *one* small vesicle badly developed. In the second child there were *two* vesicles of the same length as the respective incisions, but with very irregular edges.

With *Vaccine No. 13*, collected on April 17th, two children were inoculated. In each child there developed *two* vesicles of the same length as the respective incisions, but with irregular edges.

With *Vaccine No. 14*, collected on April 17th, two children were inoculated. In the first child there developed from one incision *one* small vesicle. The other incision gave no result whatever. In the second child there developed from each incision *one* vesicle only. They were small and badly developed.

With *Vaccine No. 15*, collected on April 24th, one child was inoculated. From one incision there developed *three* small and badly-developed vesicles. From the other incision nothing developed.

With *Vaccine No. 17*, collected on April 24th, one child was inoculated. Each incision developed a vesicle of corresponding length but with irregular edges.

It is to be noted that when the lymph is very active it produces regularly-shaped pustules as long as the insertion incisions. The following is the table for revaccinations:—

Vaccine.	Successes.	Number vaccinated.	Percentage.
No. 9	3	24	12·50
,, 14	3	20	15·00
,, 28 (of June 19th)	25	165	15·15

These last results are altogether bad and show that old vaccine lymph should never be employed, especially for revaccinations. Again, for primary vaccinations the vaccines which I have employed in my experiments should have already proved inefficacious in the hands of many vaccinators if used in public vaccinations.

I am, Sirs, yours faithfully,

Tours, Jan. 1st, 1900. DR. EDMOND CHAUMIER.

THE TREATMENT OF PANNUS BY JEQUIRITY.

To the Editors of THE LANCET.

SIRS,—I have read with much interest your admirable review of the "System of Diseases of the Eye," by American, &c., authors, but I cannot allow to pass without a strong protest the unfavourable opinion therein expressed in regard to the treatment of pannus by means of jequirity. I have frequently used this remedy and have seen it used by other surgeons with marked success where all other lines of treatment had failed.

I am, Sirs, yours faithfully,

ROBERT J. MONTGOMERY, F.R.C.S. Irel.,
Assistant Surgeon, Royal Victoria Eye and Ear Hospital, Dublin.

Dublin, January, 1900.

TO THE THIRD GENERATION: THE CONTAGIOUSNESS OF INHERITED SYPHILIS;

THE DISTURBANCE OF LATENCY IN SYPHILIS UNDER THE INFLUENCE OF CONCEPTION IN THE WOMAN; INHERITED MATERNAL TRANSMISSION.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Nov. 25th, 1899, a case of possible syphilitic inheritance in the third generation observed by Mr. Hutchinson is noted, and in THE LANCET of Dec. 9th the contagiousness of inherited syphilis in the second generation is affirmed by Dr. L. Kolipinski. Mr. Nunn has recorded a possible case combining both these propositions.

In this sequence the grandmother had originally acquired syphilis from her husband. The daughter, who herself showed evidence of past inherited disease, gave birth to a syphilitic infant, who re-infected the grandmother with digital chancre followed by secondary signs. In the father of this infant after the most critical examination there was no reasonable suspicion or history that he had ever suffered from venereal disease. "Unless," remarked Mr. Nunn, "there lurk some defect in the evidence, here were three generations syphilitic from the same source.[1]

Some little time ago I ventured to suggest that the actual condition of the woman previous to, or on, conception—apart from those pathognomonic symptoms of past inherited disease pointed out by Mr. Hutchinson—afforded room for the supposition of full or partial inherited maternal transmission to the third generation; and I should be much obliged if I might submit this aspect of this question in view of the statement in THE LANCET of Nov. 25th, that "Nothing was *a priori* more improbable than that hereditary taint should survive to the third generation." This conclusion, together with the view of probable acquisition in all cases, is apparently founded more immediately upon the known acquisition of disease by the father previously to marriage in one of Mr. Hutchinson's cases, upon the possibility of acquired paternal transmission to the child in the case which forms the subject of your annotation, and upon the rarity of possible cases. Admitting these, together with the possibility of acquired disease in the woman previously to marriage, the hypothesis of paternal transmission to an infant by a "third party" other than the legal father, and the possible diminution of inherited syphilis in the second generation itself, I submit that this *a priori* belief in probable acquisition is weakened by the fact that no reference is made to the absence of suspicion in the husband recorded by observers in other cases, to the possible cases of active inherited manifestations previously to or on conception in the woman, or to the disturbance of latency with manifestations under the influence of conception known to occur in the woman in subsequent pregnancies after previously acquired disease and noted as such in the possible subject of inherited syphilis. Furthermore, I venture to think that insufficient allowance is made for the difficulties attending inquiry into possible cases of this kind in private and hospital practice, or publication of details, as well as for the assumption of paternal acquisition and transmission, in the general absence of inquiry into or suspicion of the previous or parental history of the mother herself in cases which excite suspicion of venereal disease in her or her offspring. "To be as conclusive as possible" in the diagnosis of tardy inherited symptoms in the adult as opposed to acquisition one of the conditions formulated by Diday was that "it must be lastly known whether the parents (of the subject) at the moment of fecundation were in a condition to transmit syphilis."[2] It is this condition of the woman at the time of conception and ability of herself to transmit which seems to me to be of some importance in the question of transmission to the third generation.

Diday goes on to note that "Bell teaches positively that hereditary syphilis may remain latent in the child until the period of puberty or in the adolescent until the time of marriage or of confinement, circumstances which he regards

[1] British Gynæcological Journal, part xxviii., p. 440.
[2] Infantile Syphilis, p. 118.

as a sort of crisis capable of inducing the appearance of these symptoms." I have not so far been able to find this reference for myself, but the appearance or re-appearance of symptoms at puberty have been recognised and catarrhal affections of the genital and other mucous tracts noted. With respect to the same in the adult, the objections to which such cases are liable are obvious, especially as regards genital mucous affections; and yet amongst the numerous cases originally recorded[3] of leucorrhœa, uterine erosions, menorrhagias in young unmarried women under the heading of "struma," it is almost impossible to doubt that some were unrecognised cases of inherited syphilis; more especially as under the "scrofulous diathesis affections of the eyes leaving interstitial deposition between the layers of the cornea" were noted.[4]

The subsequent histories in these cases are aggravation of symptoms on marriage with sterility; or on conception, mucopurulent or purulent discharge through pregnancy, repeated abortions, or premature births, and subsequent pronounced uterine inflammatory disease. With regard to offspring, there is but little noted in these treatises especially devoted to the diseases of women and there is only the note of offspring who either did not survive long or were healthy and the expression of belief in transmission of syphilis to the third and fourth generation in obvious form, or, amongst other causes, in the inherited syphilitic origin of "struma." Attention, however, appears to have been directed to the state of the husband in cases simulating acquired venereal disease, and in some of these cases he was as far as possible exculpated from blame. In some suspected cases of this group which have come under my own limited observation, well-marked notched central upper incisors have been present in the woman, or these teeth have been entirely absent (Dr. Laycock, quoted by Dr. J. G. Beaney, stated that the characteristic groove is "usually obliterated by the twentieth year"); in other cases disease in the parent of the woman has been volunteered, and in a few cases I do not think there has been any reason to suspect the husband of past or present syphilis or gonorrhœa.

Whitehead recorded a possible case of general, genital and uterine manifestations in a young married woman.[5]

> In this case he on inquiry traced a succession of symptoms from infancy, through childhood to adult age, marriage, and possible conception, and regarded them as due to syphilitic inheritance. His suspicions of syphilitic taint being raised he asked for an interview with the husband, but instead the mother of the young woman came and acknowledged to disease in herself and second husband previously to the birth of the daughter.

At what time, however, the grandmother became contaminated by a first or second husband is open to doubt. Less objection can, perhaps, be taken to a case of Gilbert's quoted by Diday in favour of tardy inherited syphilis in the adult woman under the disturbing influence of conception:—

> It is that of a young woman of bad constitution, who, after the birth of one infant who wasted rapidly and died on the seventeenth day, and of another healthy at the age of two, herself exhibited swellings, one of which, over the clavicle, suppurated and ulcerated. A note also was noted on the tibia. In this case there was reported syphilis in the parents of the woman, but no evidence or history of acquisition in herself or her husband.

This group of possible cases, I admit, favours symptoms in the mother with abortions and premature births rather than actual transmission to the third generation. The possible case, however, adduced by Mr. (afterwards Sir John) Simon, and referred to by Mr. Nunn bears more directly.

> The woman, whose father had died of tertiary syphilis, herself had a first child who was judged to be syphilitic, and had in her own person some symptoms which were ascribed to the same poison, there being not the smallest possibility of syphilis as far as could be ascertained coming to her in any way otherwise than that of descent.[6]

After previously acquired disease in the woman it is known that manifestations may re-appear in subsequent pregnancies in the form of syphilides, genital and uterine lesions, purulent discharge, abortions, premature births, full or partial transmission to offspring, with subsequent fever and confirmed inflammatory uterine and pelvic disease in the mother (or death of the mother in childbed, as noted from septicæmia in one of Dr. Kolipinski's cases in THE LANCET of Dec. 9th). "Facts of this kind are numerous, and to be convinced of this it is only necessary to read the observations furnished by authors."[7] Moreover, cases have been noted of syphilis in the offspring of women previously diseased by a first and married to a second, even third, healthy husband, the woman herself apparently remaining healthy or exhibiting only uterine disease.[8]

From such facts as these it is difficult to believe that the same disturbance of latency and transmission to offspring may not occur in the case of inherited syphilis; that if symptoms are present in the mother they may not be due to revival of disease in herself rather than re-infection; and that there is no survival of hereditary taint in some at least of her offspring. The same argument, of course, applies to cases in which the woman has acquired disease previously to marriage. The question also of acquisition in infancy cannot be ignored, with subsequent symptoms in adult life. In Whitehead's case previously referred to, and possibly in Diday's, Simon's, and in unsuspected others, there may have been acquired syphilis in infancy or childhood, with re-appearance in the innocent woman of manifestations on conception, or maternal transmission. Whitehead records a definite case of lip infection in a girl of 11 years of age with subsequent constant leucorrhœa, vaginal irritation, and other symptoms, who ten years later gave birth to a syphilitic infant followed in the mother by uterine inflammatory disease, while the husband in this case had "never suffered from syphilis in any shape."[9]

I am, Sirs, yours faithfully,

JOHN A. SHAW-MACKENZIE.

Grosvenor-street, W., Jan. 22nd, 1900.

[3] J. Whitehead, 1847-51; W. Tyler Smith, 1855; J. H. Bennett, 1861.
[4] J. Whitehead: Abortion and Sterility, p. 61.
[5] Hereditary Diseases, pp. 149, 208.
[6] Discussion on Syphilis at the Pathological Society of London, 1876.
[7] E. Lancereaux: A Treatise on Syphilis, vol. ii., p. 268.
[8] J. Whitehead, p. 118. On Venereal Disease, A. Vidal (de Cassis), p. 459. Constitutional Syphilis, J. G. Beaney (1880), p. 350.
[9] Pp. 150, 164, 240.

"THE UNIVERSITY OF LONDON ELECTION: THE CANDIDATURE OF DR. W. J. COLLINS."

To the Editors of THE LANCET.

SIRS,—The anonymous letter which appeared in THE LANCET of Jan. 13th under the above heading contains at least one mis-statement of fact, but it breathes such a tone of virulent opposition as to render a reply hardly necessary. I rely, however, on your well-known love of fair play to permit me to add a word or two to the comments contained in your annotation on the same subject in which you say (p. 117) that Dr. Collins is "at variance with accepted scientific belief on the question of vaccination." As one of the Royal Commissioners appointed by Her Majesty to inquire into the subject of vaccination Dr. Collins has had exceptional opportunities for studying the subject and has given us his views at considerable length in what is known as the "Dissentients' Report," signed by Mr. Picton and himself. It would occupy too much space to quote from this at sufficient length, but I cannot do better than refer to the leading article in THE LANCET of Oct. 31st, 1896, p. 1241. In dealing with that report you adopt the following as a summary of the views held by these gentlemen:—

> One thing is certain from a perusal of the very guarded terms in which the dissentient Commissioners refer to vaccination, and that is that they believe vaccination to be a means of protection against small-pox. Nowhere, as we point out in another column, do they express a disbelief in vaccination as a power against small-pox. Indeed, they go far beyond giving this negative testimony of their faith in vaccination. They assert in a *positive* form that it is both an "effective and trustworthy prophylactic" because they propound the question in a *comparative* form as to whether vaccination can be regarded as a "more" effective and trustworthy agent in the control of small-pox than sanitation and isolation. Then, again, they really advocate vaccination, for they actually suggest that "moral influence" may properly be used in pressing it upon the population, and this attitude pretty well disposes of their having any belief in the terrible risks which, according to some people, are involved in the operation. With some of the recommendations of the dissentients it is obvious that everyone will agree.

It is possible that Dr. Collins may not be "an embodied expression of the highest medical opinion," though I personally should not be inclined to admit even this without discussion, in view of his vast knowledge of this and other subjects, and the distinguished position he has taken at our university examinations. But I do not think anyone after a careful perusal of the report in question and the valuable criticism of THE LANCET thereon can maintain that Dr. Collins is at variance on any important or vital point with the accepted scientific belief on the question of vaccination. Indeed, he has won the cordial support of hundreds of his

fellow graduates, including a large number of medical and surgical alumni of the University of London, who believe he would be as useful in Parliament as he has been in the London County Council.

I am, Sirs, yours faithfully,

THOMAS D. SAVILL.

Upper Berkeley-street, W., Jan. 16th, 1900.

PROPOSED PUBLIC MEDICAL SERVICE.

To the Editors of THE LANCET.

SIRS,—I am glad to see that Mr. M. J. Houghton is developing the above proposal. In the *British Medical Journal* of June 22nd, 1889, I suggested the formation of such a service. At first I suggested that it should contain only one department which I termed the "cash fee department." But Dr. H. Woods pointed out to me that it should contain also a department by which persons in health could insure for treatment when ill. I agreed to recommend a provident department also. I think two or three such public medical services exist—one in Coventry and one in Hartlepool. They have not, I understand, adhered to all my suggested rules. At present I would not advise that this name be continued and I would suggest that in place of it the term "Provident Medical Service" be adopted.

My aim in suggesting such a service was to show that, from long back, practitioners should not have left it to *non-medical persons* to establish sick-clubs of any kind whatsoever. I took up this position—that the wage-paid classes have no more right to employ me as their medical servant in a sick-club capacity than I have to interfere with (or exploit) the grocer, &c., who kindly sells to me groceries, &c. Let *all* practitioners agree *not* to act as medical officers to *all* sick-clubs; let the sick-clubs carry on their chief functions as related to sick pay, funeral allowance, &c.; let a provident medical association be established in each town, with branches if necessary, and then touting for clubs, the medical aid association nuisance, hospital abuse, and kindred subjects will disappear. The question of hospital abuse can never become a practical question until such a service is in thorough working order, as it would be cruelty for a hospital committee to refuse treatment unless they could refer the applicant to such a trusted service. My only fear is that such a service would run a great danger of being ruined by not having a rigid "wage limit" for membership, and thus hospital abuse if corrected at the hospital would not be cured but only transferred to the service. Doctors are a most unbusinesslike class.

I am, Sirs, yours faithfully,

Liverpool. ROBERT R. RENTOUL.

MOSQUITOS AND MALARIA.

To the Editors of THE LANCET.

SIRS,—Permit me to call attention to a slight error that is expressed in your columns[1] in regard to the discovery of the anopheles as a carrier or host of the quartan malarial parasite. It is stated that "within a short time of his arrival at Sierra Leone Major Ross was able to telegraph that he had found the malarial organisms within the bodies of the anopheles and further that he had proved that the insects would also act as carriers of the quartan parasite." As Grassi, Bignami, and Bastianelli[2] published on Feb. 5th, 1899, that they had succeeded in experimentally infecting anopheles claviger with quartan parasites by feeding it on a woman suffering from a severe quartan infection and that they had found stages of development of the organism in the stomach wall of the mosquito so infected, it is clear that the credit of the discovery is due to them and not to Ross. I have been influenced to call attention to this fact for the reason that on several previous occasions the same error has found expression in the columns of THE LANCET and of other medical journals.

I am, Sirs, yours faithfully,

IRVING P. LYON.

Buffalo, N.Y., U.S.A., Jan. 14th, 1900.

*** The claim which Dr. Lyon contradicts does not seem to us to be made in the words which he quotes.—ED. L.

[1] THE LANCET, Dec. 30th, 1899, p. 1819.
[2] Reale Accademia dei Lincei, vol. viii., 5 febbraio, 1899.

"THE MURMURS OF MITRAL STENOSIS."

To the Editors of THE LANCET.

SIRS,—Dr. Sansom in your issue of Jan. 20th (p. 195) has protested against the statement in my letter of a fortnight previously that his article in Professor Allbutt's "System of Medicine" misrepresents me. I did not mean that his *résumé* of my views was inaccurate, but rather that it was calculated to leave an inaccurate impression. Dr. Sansom's quotations from my Paris thesis of 1896 show that I am largely responsible for this, since auricular hypertrophy, on which I there lay so much stress, implies an extra ("abnormal") powerful contraction of the auricle. In the thesis I magnified the importance of hypertrophy as the most tangible part of the evidence of the possibilities of the auricle. This was out of consideration for the probable training and prejudices of the examiners for whom it was prepared. I imagined that if I could get them to admit the probability of my theory when the auricle was hypertrophied I might then lead them a step further—viz., to recognise that it was also possible, at least theoretically, when the auricle was not hypertrophied. The thesis was well received as I gained a "très bien" for it and was asked to write a *résumé* for the "Archives de Médecine Expérimentale et d'Anatomie Pathologique," which I did.

A few pages beyond Dr. Sansom's second quotation from my thesis—viz., on page 41—I venture to state why I gave such prominence to the element of hypertrophy: "Pour satisfaire ceux qui croient plus à la force musculaire qu'aux principes mécaniques, j'attire encore une fois leur attention sur ce fait que j'ai toujours supposé une oreillette hypertrophiée et non dilatée." But I continued, p. 42: "Mais, même s'il n'y avait pas d'hypertrophie de l'oreillette (et je ne suppose pas que l'hypertrophie existe pour lui donner la faculté de résister au ventricule, ce à quoi il a été, j'imagine, toujours plus ou moins habitué, main pour lui donner le pouvoir de pousser le sang avec une vitesse suffisante au travers d'un orifice rétréci), il serait mécaniquement vrai qu'un ventricule vigoureux, lorsqu'il est gros, ne peut pas dilater une oreillette faible quand elle est suffisament petite, pas plus qu'un gros ballon, distendu, fait en caoutchouc épais, ne peut dilater un petit ballon, distendu, et fait en caoutchouc mince, lorsqu'il est mis en communication avec ce dernier." It is clear, therefore, that even in my Paris thesis, my earliest publication on the subject, I did not regard a hypertrophy of the auricle as essential though I have always maintained it to be helpful; still that thesis, written against time as it was, has given undue importance to the valuable element of hypertrophy and justified Dr. Sansom's term "abnormally powerful" far more than my somewhat offensive expression "misrepresents me," which I very much regret having employed, and trust Dr. Sansom will add another to my many debts of gratitude to him by accepting my sincere apology.

The term "abnormal" evidently conveys a different impression to different minds. Thus in answer to my question "Is it abnormal that the smaller piston of a Bramah press should be able to force up the larger?" Dr. Brockbank replies "yes," where I should have said "no." His words are: "Yes, it is impossible for the smaller piston to press up the larger unless it be plunged with sufficient force to overcome the resistance of the large piston." Surely that is a normal and not an abnormal physical fact—a fact in hydrostatics which indicates that given suitable mechanical conditions a very weak force can overcome a very great resistance. Such a mechanical advantage the auricle has when it has nearly emptied itself and presents a small internal area to oppose a full ventricle beginning to contract and presenting a large internal area, for this is their relative condition as regards area when their contractions overlap.

Dr. Brockbank cannot get away from the idea of a considerable force to produce considerable pressure. If he will get a multiplying pulley gear and put a small child to pull the rope while he holds the free pulley, he will discover that the child can easily pull him over, but he must not conclude therefrom that the child exerts a man's force. Similarly if he experiment with a Bramah press, or the rubber balloons I have more than once referred

to, he will readily understand that mechanical advantage may allow great blood-pressure to be generated by forces quite insufficient to produce it without that advantage. Dr. Brockbank says: "It is impossible for an auricle to hold up the ventricle and prevent the regurgitation of blood, which I believe creates a crescendo murmur, unless the auricle contract with sufficient force to do this. That an auricle possesses such power at any time, especially in mitral stenosis when it is so often abnormally thin, has not been proved, nor is it probable that it does possess such power." Is the auricle "so often abnormally thin" in mitral stenosis? Even in the post-mortem room, where all the effects of the heart's final failures and breakdown are especially displayed, I have shown that 44 out of 77 cases of severe mitral stenosis at Guy's Hospital are recorded as having the auricle hypertrophied, and hypertrophied in nearly one-fourth of the slight cases, while in cases of stenosis dying in the surgical wards of something else auricular dilatation is strikingly rare, and if I remember correctly the auricle was never sufficiently thin for it to be remarked.

Nothing in medicine is of universal application and no theory can be demonstrated by every case. I am quite prepared to admit that when an auricle is abnormally thin it is abnormally weak and may fail to defend a stenosed mitral orifice, even as it may fail to produce an auricular-systolic murmur. Such failure affects no principle of action.

Moreover, it is exceedingly "probable" that the auricle does possess the power Dr. Brockbank denies to it. The auricles have even been known, as in a case of ventricular calcification, to bear the whole brunt of the circulation and maintain it. So far as the mechanics of the circulation are concerned the heart is a mechanical instrument subject to mechanical laws, and one is (1) that the thickness of a contracting sphere varies inversely as the square of its diameter; and the pressure it can exert on its contents, if the contraction of its fibres be constant in force, is proportional to the wall thickness. If this is not understandable it may be put thus: with the same number of contracting muscular fibres the surface of blood to be pressed on varies directly as the square of the diameter and is therefore, or may be, subjected to a pressure varying inversely as the square. Another law is, (2) the pressure a contracting sphere can exert on its contents varies inversely as the diameter of the sphere. This latter depends not on the wall thickness but on the increased curve of the decreasing sphere (*vice versâ*) which makes its contractions more effective on its contents when small. So, if an auricle in contracting become a sphere of one-third its initial diameter it can theoretically exert a pressure of 27 times its original amount. If it did but half this it would be sufficient for the purpose of my theory. This is neglecting hypertrophy, which is often present in slight and usually present in severe cases of stenosis, and which is always a reserve factor in my favour. The effect of the escape of the liquor amnii in augmenting the pressure of the uterus on the fœtus is due to the operation of the same two laws, for size is indirectly more a pressure factor than is muscle. The ventricle differs from the auricle in having from the beginning and when large to expel its blood against high pressure. If its load came on it at the end when the ventricle has become small, as the auricle's does, its walls might be several times thinner than they are.

Dr. Sansom points out very opportunely and with great reason in his letter that if regurgitation be a feature of mitral stenosis, as Dr. Brockbank's theory demands, "there would in all probability have ensued dilatation of the cavity of the ventricle, for mitral regurgitation in any notable degree is followed by enlargement of the ventricular cavity. As this cavity is observed to be small it is a fair inference that regurgitation has been prevented by some change making for compensation." For my reply to Dr. Woods's third objection which Dr. Brockbank quotes I must refer him to my letter in the *British Medical Journal* of March 20th, 1897, p. 767.

There are many other matters of interest in Dr. Brockbank's and Dr. Theodore Fisher's letters which some day we may better agree over, especially if I learn meanwhile from Dr. Sansom's just rebuke to be a little more courteous in my criticisms.

I am, Sirs, yours faithfully,

Mentone, Jan. 22nd, 1900. D. W. SAMWAYS.

PUBLIC HEALTH OF DUBLIN:

THE RE-HOUSING OF THE POOR.—THE BACTERIA IN THE SOIL.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(Concluded from Jan. 20th, p. 201.)

ON the south side of the Liffey, behind and not far from Dublin Castle, there is a broad thoroughfare called Peter-street. In former times this street was evidently inhabited by wealthy people, but it has quite fallen from its high estate. A part of the street is now occupied by the Adelaide Hospital, and such is the poverty-stricken condition of the surroundings that the house next door to the hospital is in ruins and uninhabited. It should be easy to purchase this house and utilise the site to enlarge the hospital. On the opposite side of the street there is a whole row of tenement houses which have been handsome private dwellings, five storeys high, but the first one I entered I found to be inhabited by no less than 15 different families. For this numerous population there is but one closet situated in the back-yard, which is below the street level. As no one is responsible for this closet and charged with keeping it in order it has been broken to pieces; there is filth on all sides and the place is absolutely unfit for use. Next door and for a similar house there is also only one closet in the back-yard, and here the water-supply pipe is out of order. The water flows continuously over the closet-seat; it does not enter the pan, but forms quite a little rivulet in the middle of the yard. This is a great waste of water, for it does not even serve to flush the soil-pipe. These closets need to be rebuilt. Inside the houses there were the usual evidences of neglect and poverty—cobwebs on the stairs and dust and dirt on all sides; the interior of the rooms varying according to the character of the tenants.

Throughout Dublin, and constituting a special feature of the city, it is impossible not to be sadly impressed by the great number of abandoned, uninhabited, and dilapidated houses that are rapidly falling into ruins. But in going from Peter-street to the Coombe district I came across a greater number of these houses than usual. In some cases the roof has entirely disappeared. I noticed three such houses in Coombe-street. Others have one or two inside floors broken in as if the shell of a 100-ton gun had passed through them. Park-street, off Ash-street, presented a veritable scene of desolation. There were great gaps where houses had formerly stood—even the outer walls had given way. Other houses, still standing, had no window-frames remaining, and from a lower window it was sometimes possible to see to the top of the inside of the house, because the intervening floors had all gone. Ash-street is, indeed, a lugubrious and sinister thoroughfare. It cannot boast even of a gutter, and not many paving-stones remain. In the centre of the street there is an irregular indentation which serves as a sort of surface drain. The closets in the yards behind the houses are indescribably filthy. Fæcal matter is strewn in all directions, and close to this foulness people sleep, on the ground floor and on beds that have no bedclothes. The weary lie down without undressing and with the dirt of the neighbourhood clinging to them. Then there is the terrible aspect of the inhabitants, especially the women, whose sordid, torn, greasy, and ragged clothes hardly hang on them. At the corner of Vicar-street notably there is a house that is falling to pieces, and it seems extraordinary that there should be so much property in the heart of the town, and not far from the Castle, that is thus tenantless and in ruins. Here and there, it is true, some poor people crawl in and inhabit a room or two in a house which has partially lost its roof and the greater part of its windows. Doubtless they have no business to be there and perhaps pay no rent, but in the midst of such poverty, recklessness, and neglect the wretched sufferers resort to every expedient. The authorities can close a house as unfit for habitation (as a matter of fact some 1500 houses in Dublin have thus been closed) and as no compensation is given this is the easiest manner of dealing with insanitary property. A scheme for rebuilding such houses under the Housing of the Working Classes Act would be an expensive and complicated matter; and though a good deal is being done under this Act all the unhealthy houses

and all the bad property cannot at one and the same time be treated in this manner. On the other hand, many of the owners of these wretched dwellings are very poor and cannot afford to put their property in proper repair, so the houses are closed and fall into ruins.

In Smith-alley I came across another public fountain, similar to the one situated in Taafe-court already described. Here, again, there was fæcal matter round the tap, and people were emptying the soil from their pails on the gully under the tap where others came to fetch their supply of drinking water. At this spot a girl about 12 years of age came past. On one foot she wore a man's boot; the other foot was bare. She had nothing on her head and very little on her body, and it was a cold winter morning. The poverty that this sorrowful sight indicated is such that many of the poor strive to rent a room for 8*d*. per week. Of course, no suitable room can be obtained for this price, but there are a few noisome back basements that are let out for that sum. Many of the persons who lodge in such places have no better occupation than that of going long distances in the early morning so as to pick up cockles in the Bay of Dublin. These they sell at night at the street-corners. When this class of people succeed in paying 1*s*. a week rent they consider it quite an achievement and flatter themselves that they have already risen in social rank. This is where the difficulty of municipal action comes in. It is comparatively easy to provide model dwellings that will be readily rented at such rents as will prove remunerative, but this class of people cannot be the tenants. After all this it was a very pleasing sight to visit some of the newly constructed quarters, such as the Thomas Davis district and notably John Dillon-street. Here there are small neat red-brick cottages. Each tenant has his own closet and can therefore keep it clean, in good repair, and in working order. In front of the houses the road is asphalted. Consequently it is comparatively free from dirt or mud, there is less damp, and the subsoil cannot be contaminated.

In Blackhall-place there are 15 self-contained houses at 7*s*. 6*d*. per week, five shops at 6*s*. 6*d*., five two-roomed dwellings at 3*s*. 6*d*., 14 at 4*s*., 14 at 3*s*. 9*d*., 14 at 3*s* 3*d*., and 14 at 3*s*. On visiting one of these tenements for which 3*s*. 9*d*. is charged I found that, though the appointments were all good, the second room, used as a bedroom, seemed to be very small. Seeing what is done in London, where the ground-rent is much higher, the rent charged appears excessive. In the Bow-lane district there are 86 model tenements. Five of them have shops and are rented at 5*s*. to 5*s*. 6*d*., the rent for the others varies from 2*s*. to 4*s*. 6*d*., the latter having three rooms. There are 19 two-roomed tenements at 2*s*. In the Benburb-street district there are 23 one-roomed tenements at 1*s*. 6*d*., 14 at 1*s*. 9*d*., and 28 at 2*s*., and 76 tenements at higher rents. From the sanitary point of view it is the cheapest of these tenements that are of the greatest use and interest.

Of course it is the extreme poor who are the most difficult to deal with. Fortunately, during the last session of Parliament, the borrowing powers of the Dublin Corporation were increased to the extent of £600,000. Therefore, the city now proposes to spend a quarter of a million for the housing of the extremely poor. Then we have Lord Iveagh's celebrated scheme which will also involve the expenditure of another quarter of a million sterling. By this scheme the Bull-alley area is being cleared while the corporation takes up the adjoining district, so that a vast clearance will be accomplished on the slope from the Castle to St. Patrick's Cathedral, and some of the worst alleys, tortuous streets, and filthy and unhealthy houses will be swept out of existence. These will be replaced by broad streets and model dwellings. Lord Iveagh in his district proposes to built not only tenement houses, but also a bath house and a concert-hall, so that there shall be some local attractions and entertainments which will render the lives of the poor people more refined and joyful.

It will thus be seen that something is being done to meet the grievances which I have denounced. Considerable expense has already been incurred to clear insanitary areas, and these have been leased to public companies for the purpose of erecting artisans' dwellings, or else the corporation itself has built such tenement houses on the sites. In Coombe-street and Plunket-street £57,689 have been spent for this purpose and yet much remains to be done here. The 144 tenements in Benburb-street cost £27,273; in Bow-lane 85 tenements cost £10,004; in St. Joseph-place 80 one-storey self-contained cottages cost £25,500. At Blackhall-place and North King-street 85 tenements cost the municipal authorities £12,000. Yet when contemplating the poverty, wretchedness, and dirt of the town it is difficult to realise that so much has already been accomplished; and in some respects it must be confessed that there has been gross neglect. For instance, there is only one public washhouse in the city, and it has been closed now for some considerable time. It is argued with some show of reason that the people are not as dirty as they seem, but very few opportunities are provided for them to be clean. The fact that little boys crowd in the summer months to bathe in the sewage-polluted Liffey shows that if they had better opportunities they would not be so dirty. Thus, when in St. Stephen's-green the ornamental waters were provided women from the neighbourhood brought their children to bath them here. It must also be borne in mind that the large houses now so generally let out as tenement dwellings were in most cases built a hundred or more years ago. The water-supply then installed was meant to provide for one family only, and what was considered sufficient a hundred years ago would be deemed quite insufficient even for a single family to-day. Yet in one of these houses I counted as many as 15 different families. The water is generally obtained from a tap in the back-yard, there is no delivery upstairs, and the rooms are so crowded that there is no space for tubs and the washing of linen, to say nothing of the trouble of bringing large quantities of water upstairs and the difficulty of heating the same. Thus the washing of linen is very generally neglected. In many of these old houses, also, there are no back kitchens, sculleries, boilers, or washhouses. How, then, are the poor tenants to wash their linen? Under such circumstances it would be natural to expect that there would be an extra supply of public washhouses, and yet the reverse is the case. It is difficult to find an excuse for such neglect. Another cause of the prevalence of dirt is the innate modesty of the poor women. Huddled together in crowded tenements they have not sufficient privacy and are too much afraid of indecently exposing themselves to wash properly. Hence there is a widespread prevalence of vermin, and a great many of the poor who go to the hospitals are found to be covered with lice.

Where a better example might be given which would serve as a lesson in cleanliness, this is too often neglected. Thus I have received many complaints as to the condition of some of the railway-station lavatories, where unpleasant odours prevail and the woodwork is soaked with urine and the closet-pans are caked with filth, and accumulations of dust contaminated with organic matter are allowed to remain. Many of the lodging-houses are far from clean, the mattresses are rarely aired and exposed to the sun, as is the common custom on the continent. Too often the beds are not properly made, but simply covered over while still warm. The cabs are badly cleaned. The shop-front windows are dirty and dingy. The street pavements are often insufficiently washed, while the cabstands are not infrequently surrounded by fœtid matter that all helps to render the streets unpleasant and to foul the subsoil. Consequently such examinations of the subsoil as have been made reveal a dangerous state of contamination. But such investigations are few and far between. In England the Local Government Board has the financial means by which it is able to despatch expert investigators wherever epidemics may occur. This is not so in Ireland. Thus some time ago there were epidemics at the creameries where the Irish farmers send their milk to be converted into butter by mechanical processes. This is a sort of coöperative arrangement managed by the Irish Agricultural Society but it was menaced with ruin by the outbreak of typhoid fever. The medical members of the Irish Local Government Board wished to have some bacteriological examinations in order to see whether, if the typhoid bacillus was in the milk, it could pass through the centrifugal machine and find its way into the skimmed milk or the butter, but the Treasury flatly refused a money grant for this purpose. In England bacteriological experts are employed by the Local Government Board and paid proper fees. Not so in Ireland, and yet this is but a trifling outlay in comparison to the very great service to be rendered. For the same reason, water cannot be analysed in Ireland under the auspices of the Local Government Board. This Board has no laboratory of its own and no funds to employ outside experts. Though attention has been drawn to this matter on several occasions, the Treasury seems incapable or unwilling to understand that this is really a serious

grievance. No one can deny the importance of carefully watching over the water-supply and milk-supply. In Dublin there are many dairies badly situated and close to dwelling-houses. There used to be one such dairy, with some 200 cows, close under the walls of the Richmond Hospital. The stench coming from it seriously inconvenienced the patients. Protests of course were made. The city corporation for a time exacted the more prompt removal of the manure, but they had no powers other than that of merely seeing that the dairy was kept fairly clean. The hospital authorities were finally compelled to buy out the dairy and thus only were they able to get rid of the nuisance.

Slaughter-houses and dairies, and the food-supply generally, need a much more strict supervision. Then the schemes for the re-housing of the poor, extensive as they are, will not suffice to solve the difficulty. Much more also must be done to teach the people how to live decent lives. The women especially need to be taught how to wash, how to sew, and how to cook. It is a well-known saying in Ireland that God makes the food and the devil cooks it. Practical lessons in domestic economy should be more extensively given in the schools and no one should be allowed to open a school unless ample means for washing are provided. The Irish Public Health Act of 1878 contains many excellent provisions, but these are not strictly enforced. Party politics, personal influences, and religious antagonism play far too large a part in matters which should in no wise be connected with such subjects. The technical aspects of the problems to be solved are too often set aside in favour of party considerations. This fault may be found doubtless in all countries, but it is especially accentuated in Ireland and has done much to prevent progress on practical lines. But in the face of the terrible death-rate which has now prevailed so long in Dublin there should arise a strong and united demand for reform, and reform for its own sake quite apart from all party or factious considerations.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Report of Native Assistant Surgeons upon Plague in Calcutta.—The Report of the Plague Commission.—Novel Medium for Plague Cultures.—Further Outbreak of Plague in Bombay City.—The Progress of the Epidemic.—Famine and Plague.—Strengthening the Indian Medical Service.

THE question was put at the recent meeting of the Bengal Legislative Council—"Will the Government be pleased to appoint a committee of expert medical men to report if the cases now occurring and reported to be plague cases are cases of real bubonic plague?" The action of the Government has just been made public and the answer to the above question was as follows: "A few weeks ago the Lieutenant-Governor arranged to depute two specially selected assistant surgeons for a time to test the correctness of the reports of plague cases in Calcutta. The inquiry is not yet complete, but so far it goes to show that unfortunately cases of genuine plague unquestionably do exist in the town." This means that two assistant surgeons were sent about the city to inquire into, and report upon, cases which were at the same time being investigated by the regular plague medical staff. There is not a medical man in Calcutta, native or otherwise, who has had the opportunity of gathering experience of plague enjoyed by the regular staff. It is true that few cases are seen during life by medical men and still fewer by really competent judges, but undoubted cases continue to "crop up" and there are a large number of very suspicious deaths. There have been 170 deaths in Calcutta during the past three weeks in excess of the average and there is no particular disease prevalent to account for the increase. There have been 188 deaths returned as plague. Under these circumstances the additional inquiry might seem to show a want of confidence by the Government in its own officers. But there is a broader view which can be taken—viz., that the Indian Government desire to satisfy the natives through the medium of native medical men as to the exact state of affairs. With the returns which have been published week after week it is impossible to suppose that the disease has been eradicated.

The report of the Plague Commission, which was expected wo or three months after the termination of the hearing of the evidence, is being delayed owing to friction between the medical and administrative sections of the commission. It is said that drafts drawn by the former are rejected by the latter and *vice versâ*. The medical members state that the measures for dealing with plague ought to be carried out by men specially trained to diagnose and deal with the disease rather than by laymen who have had no such training. The others hold that the administration of the measures prescribed by Government, the building of hospitals, and the construction and organisation of segregation camps are more efficiently done by trained administrators and business men, medical officers of course having the care of the sick. Although they do not agree upon their report the commission is in accord regarding some minor points. One of these recommendations is that the disinfection of passengers at railway stations should be discontinued, experience having shown that it does not prevent the dissemination of plague from any given centre and uselessly inconveniences and annoys those subjected to the process. In view of the importance of safeguarding the foreign trade of the country it is essential that plague shall not be carried abroad by sea-going ships or steamers and that passengers bound for foreign parts shall be subjected to the strictest examination. It is understood that the commission considers that the port health officers should be strengthened so that the trying work can be done without imposing an undue strain on the health and endurance of those who have so devotedly discharged a responsible but very irksome duty.

In order to meet the religious scruples of a large section of the natives experiments have for some time past been conducted in order to ascertain whether or not the plague prophylactic obtained by growing the bacilli of plague in a medium manufactured from wheat was as effective as that made from meat in the ordinary manner. For rabbits at least the wheat peptone vaccine is as effective as that prepared from meat peptone. Only one experiment has been made, but there is no reason to suppose that human beings will react differently. It is suggested that publicity be given to this experiment, so that those communities which have religious scruples against the use of vaccine prepared from goats' flesh may be made aware that they can now be protected by the use of the wheat-peptone prophylactic. The new material is ready for distribution.

The recrudescence of plague in Bombay city has set in in earnest and the weekly general mortality is now more than double the normal. The plague returns give 278 deaths, while the general mortality last week was 1552. 700 plague deaths would in some opinions be nearer the mark. It is curious to note that measles, small-pox, and relapsing fever are all more prevalent than usual. Cholera, however, seems to keep subdued, while plague is rife. It is very satisfactory to find that inoculation is coming more into favour in Bombay city; 7179 persons were operated on last week.

The returns for the whole of India show a considerable further reduction in mortality from plague—the improvement being chiefly due to decrease in the number of deaths in the Bombay Deccan. Karachi has at last a clean sheet for one week. The Madras Presidency returns 42 deaths, Calcutta 50 deaths, Bengal Mofussil four deaths, the Punjab three deaths, the Central Provinces 13 deaths, Mysore State 184 deaths, and Rajputana two deaths. The total for the week is 1384. It will be seen, therefore, that plague is still widely distributed although not very active. The Saran district is the only one in Bengal which continues to return cases and last week there were nine seizures and four deaths. The returns for Calcutta are little to be relied on. The general mortality is higher than normal. The truth probably is that plague has been slumbering in Calcutta ever since the outbreak last spring. The abolition of railway examination is for the best, but shipping inspection, as the commission suggests, ought to be much more thorough. Many native boats escape detection and the examination of large numbers of passengers compels the officers to hurry over their work.

No sooner has plague subsided somewhat than famine scourges large tracts of land. The total number of people in receipt of Government relief in India is now close upon 2,250,000, 1,630,267 being in British territory and 596,291 in Native States. Western India is the sufferer from both calamities, and I regret to hear that the famine is even worse than was anticipated in the early part of the disease.

The short-handedness of the Indian Medical Service has been commented upon over and over again, so that with regard to the proposal for improving the reserve of the

assistant surgeons in the army I am glad to find that a satisfactory conclusion has at last been arrived at. There is to be an addition of 155 assistant surgeons to the existing reserve.

Dec. 28th, 1899.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Anglo-American Insurance Company.

AT the Birmingham Quarter Sessions on Jan. 21st a case of considerable interest was investigated before the Recorder. References to the matter have appeared already in your columns. A man, aged 35 years, was indicted for having attempted to obtain by fraud £100 from Dr. W. D. Lawrie, a surgeon living in one of the suburbs. It was stated that on Nov. 21st, 1899, the accused called upon Dr. Lawrie and represented that he was authorised by the Anglo-American Insurance Company to appoint medical officers in the principal towns of the country at a guaranteed annual salary of £100 on their agreeing to take shares to the extent of £100. He further stated that the company was registered, and produced a prospectus on which the names of the directors, who, he said, had invested £5000 in the company, were type-written. Among these was the name of Sir William Mac Cormac. A subsequent meeting was arranged, but in the meantime Dr. Lawrie consulted his solicitor, and a development took place in which the police made additional inquiries. It was shown at the trial that the prisoner and his agent had collected as much as £4200, principally from medical men. An able attempt was made by counsel to exculpate the prisoner, but the jury without hesitation found a verdict of guilty. The Recorder, in imposing a sentence of 15 months' imprisonment with hard labour, said that the prisoner had been convicted on the clearest evidence and that his was a most bare-faced attempt to defraud.

Assault on a Medical Man.

An extraordinary case was brought before the local magistrates at Rushall on Jan. 22nd. Dr. W. H. Whitehouse was summoned for assaulting a shoemaker at Pelsall on Jan. 8th. It was stated that Dr. Whitehouse was sent for to the house of the complainant on the morning of the above date; several other messages were subsequently sent and he ultimately arrived about half-past 5. The wife then told him that he was not wanted and that they had sent for another medical man. Dr. Whitehouse turned to leave the house when the husband came downstairs and refused to allow him to leave until he had apologised. This he refused to do. This was the occasion of a combined attack by the woman with a poker, the husband with his fists, and a small boy who rendered effective service by kicking the doctor's shins. The case against Dr. Whitehouse was rightly dismissed, and the cross-summonses were then heard against the man and his wife for assaulting him. Evidence was given as to the injuries, and the defendants were fined £2 4*s.* each, including costs, or a month's imprisonment.

The Degradation of Consulting.

This scheme against which so strong a protest was raised by the profession, supported by the medical press, has not been allowed to slumber. It is stated that the committee of the Birmingham Medical and General Consultative Institute, under the auspices of the Hospital Saturday Committee, have made material progress with their arrangements. An appeal through the lay press of some of the larger cities has brought a number of responses from applicants willing to take the post of consultant, so much so that it has been not easy to make a choice among them. The selected gentlemen have been interviewed and an appointment has been made in which the committee express their entire confidence and which they think will give satisfaction to all concerned. A suite of rooms will be taken in a central position and as soon as possible the details set going. The scheme has met with hostility upon just grounds from the local members of the profession, and I am not prepared to envy the recipient of the committee's favours.

Medical Charities and War Funds.

In common with many benevolent institutions the medical charities are feeling the competition with the numerous efforts being made to help those connected with the war in South Africa. At the annual meeting of the Hospital for Children held on Jan. 22nd it was alleged that a distinct difference was being felt from the war fund appeals to private charity. The report showed that the number of patients for the year was 15,392, as against 14,565 in 1898. The number of out-patients was 14,164. The detention rate for the year was 19·1 days. The death-rate, calculated on 1028 patients treated to the termination of their cases, was 6·2 per cent. The average cost of patients per week was 3*s.* 1*d.*, while that of the officers was 6*s.* 10*d.*, as against 7*s.* 6½*d.* in 1898. The donations had increased by £226 while legacies of £2796 had been received. The report was full and concise and the institution is in a condition to appeal with every prospect of confidence for additional subscribers.

Jan. 23rd.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Finances of Manchester Medical Charities.

A PAPER was read recently at the meeting of the Manchester Statistical Society by Mr. F. Brocklehurst, a member of the City Council, on the Medical Charities of Manchester and Salford. He summarised with a good deal of difficulty the figures obtained from the reports of 20 charities. Each institution gives its information in its own way, while a few of them, for instance, give the number of beds or the cost per patient treated. If the different authorities would agree to a uniform plan of presenting their statistics something would be gained by the charities and the public. Six only of the 20 give any information as to the residences of the patients. Some months ago it was stated that 40 per cent. of the patients treated at the infirmary came from outside districts, contributing little or nothing to the charity; and this is no doubt true of most of the other institutions. Mr. Brocklehurst estimates that, taking the whole of the charities, one-fourth of the cases treated during the year were from the outside. This would be regarded with equanimity but that so many of the medical charities carry on their work "in a condition of chronic insolvency." He gives 11 hospitals (among them the Salford Royal Hospital and Dispensary, the Clinical Hospital for Women and Children, Ancoats Hospital, St. Mary's Hospital, the Manchester and Salford Hospital for Diseases of the Skin, the Manchester and Salford Lock Hospital, the Southern Hospital for Diseases of Women and Children, and the Northern Counties Hospital for Incurables) with an aggregate deficit of £5796. And, in addition, the Eye Hospital has had to realise £2000 of its securities to pay its way; the Dental Hospital report says that all its securities have been sold to pay off the deficit; the bank overdraft of the Consumption Hospital was £560 and that of the Children's Hospital was £1550. A few years ago the Lewis trustees offered St. Mary's Hospital £70,000 for a new building, but the offer was so hampered with conditions and with a complex arrangement with the Southern Hospital that it came to nothing, while it seems to have injured both institutions and to have irritated the trustees. It is stated that the annual loss in the working of St. Mary's Hospital has "for many years" been £500 or £600. But such is the faith of hospital managers that in the face of all this a most expensive site at the corner of Oxford-street and Gloucester-street, close to the Oxford-road Station—one of the worst that could have been chosen for a maternity hospital, being low and often enveloped in fog as well as most noisy—was purchased for the erection of a much larger building than the old St. Mary's Hospital. It was stated that in 1898 six charities had to take from their endowment funds £7000, and if bank overdrafts and adverse balances had been cleared off a further £5000 or £6000 would have been required. This year the local charities will no doubt suffer as a result of the drain on public and private resources in consequence of the war in South Africa, so that it would be too sanguine to hope for immediate improvement in their finances. If our men of business conducted their concerns as they manage the hospitals they would soon come to grief. There is no limit to the demands on medical charities, and it is difficult to push them aside; but it is a question whether too much is not being done for those who cry "Give, give," when they could

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help themselves; and whether our gigantic system of relief, with inefficient checks on abuse, is not doing as much harm as good by sapping all manly self-reliance and replacing it with the ethics of the chronic pauper. The difficulty, of course, is to help those in need and deserving, for the needy undeserving are well served by the Poor-law, while the sufficiently well-to-do are told to help themselves. Does this almost insolvent condition of so many of our hospitals obtain all over our country?

Ladies' Health Society.

The Ladies' Health Society, in union with the Manchester and Salford Sanitary Association, held its thirty-ninth annual meeting on Jan. 11th in the Manchester Town Hall. It was presided over by the Lord Mayor. One or two fresh departures were made during the year. Special attention had been paid by the health visitors to giving the people information as to the infectious nature of consumption and how best to prevent its spread, guided, of course, by the instructions of Dr. Niven. These health visitors go from house to house, see the conditions under which the people are living, and are often able to improve them. They report defective drainage and insanitary arrangements to the authorities, give advice, often practical, in cases of illness—not interfering with the medical man I may hope—and instruct mothers in the feeding of infants. Sometimes they help in the actual cleaning of a room and give assistance in any way they can. All this work is directed and overlooked by the lady superintendents. But more help is needed. The area to be covered is too great for the resources of the society and many parts of the town are untouched. But, like many of our charitable and philanthropic societies, it lacks support, and even with the valuable aid given by the corporations of Manchester and Salford the expenditure exceeds the income. The honorary treasurer stated that with subscriptions of £297 they had practically a loss of £100. The Dean of Manchester drew attention to the fact that the income had not increased during the last 20 years. It is not a time to expect a great accession of subscriptions when special and urgent calls are so numerous, but if the hundreds in Manchester who give largely were supplemented by the many thousands who could give a little our hospitals and other agencies for the benefit of those who need help would soon be in a more flourishing condition. The Dean thought that many ladies would find recreation in the best sense for the mind and spirit, if not for the body, in going to and fro in the great working-class districts of Manchester, ministering not merely of their substance but also of their kindly sympathy.

Salford Workhouse Question.

At the meeting of the Salford Board of Guardians on Jan. 19th the question of the building of a new workhouse was under discussion. The estimate for the undertaking was £201,137, which was afterwards brought down to £194,771. There is also a scheme for providing cottage homes for the workhouse children which it is expected will cost not less than £50,000, and one of the guardians pointed out that if both were pushed forward at once their borrowing powers would be largely exceeded. In the end it was decided to defer the consideration of the plans for the workhouse until those for the cottage homes had been submitted. This seems a wise decision, for the removal of the children from the workhouse atmosphere—both mental and physical—to cottages where the pauper surroundings will be less obtrusive cannot but be good for them. And of course the removal of the children will greatly relieve the pressure on the workhouse and give, according to the testimony of one of the guardians, accommodation for 300 persons and meet all requirements for the next 10 years. If this be so the need for the immediate erection of a new workhouse is not apparent, but some members of public bodies are never happy unless they can be spending the ratepayers' money either wisely or unwisely.

Vaccination of Oldham Pauper Children.

At the meeting of the Oldham Board of Guardians on Jan. 11th it was stated that "it was a regular thing for the doctor to vaccinate children without receiving the consent of the parents." The chairman moved a resolution forbidding this and went on to say that "there was no doubt the medical fraternity were rushing the Vaccination Act to all intents and purposes," whatever this may mean. He said that "about £1000 a year would be spent by that board in administering the Act and he thought it was scandalous that that amount of money should be spent." Presumably the chairman would not think it scandalous if he aided and abetted an outbreak of small-pox.

Jan. 23rd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Royal Infirmary.

AT a meeting of the managers of Edinburgh Royal Infirmary held on Jan. 22nd a donation was intimated from Mr. Thomas Aitken of Nivingston and 5, Grosvenor-crescent of the sum of £40,000. In consideration of this the managers agreed to name a ward the "Aitken Ward" and recorded in the minutes an expression of their deep gratitude to Mr. Aitken for his munificent donation to the infirmary and of their hope that he would be long spared to take an interest in the ward. Mr. Aitken is the manager of the London and Edinburgh Steam Shipping Company.

Hospital for Incurables in Dundee.

The Queen has graciously consented that the new hospital for incurables which has been established in Dundee to commemorate the Diamond Jubilee should be called "The Royal Victoria Hospital."

Typhoid Epidemic in Ayr.

The typhoid fever epidemic seems to be again increasing in the burgh of Ayr. The total number of cases is now 196. There have been 23 deaths in all, four of these having occurred since Jan. 1st. Nearly all the cases have come from the Newton and Wallacetown districts of the town.

Jan. 23rd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The City of Dublin Hospital.

MR. HENRY MOORE of Mercer's Hospital, who has recently left Dublin for service in South Africa, has been unanimously elected surgeon to the City of Dublin Hospital to fill the vacancy caused by the death of Dr. W. I. Wheeler. Mr Moore will assume his duties on his return from the Cape.

Death of the Registrar-General for Ireland.

Dr. Thomas Wrigley Grimshaw, for many years Registrar-General for Ireland, died from pneumonia on Jan. 23rd at Carrickmines, after an illness of only one week's duration. He was in his sixty-first year. Recently the duties of the Registrar-General—always of an important character in connexion with public medical, sanitary, and statistical subjects—were rendered particularly onerous owing to the very exceptional death-rate of Dublin. Dr. Grimshaw was a Fellow and ex-President of the Royal College of Physicians of Ireland and a consulting physician to a number of hospitals. He rendered most efficient service on many Government Commissions. It is recognised on all hands that his difficult duties were always discharged, not alone with conspicuous ability, but also with singular fidelity, tact, and courtesy. Dr. Grimshaw's death will be deplored by a very wide circle of his friends, while his loss as a prominent and most highly efficient public servant will be severely felt.

The Irish Hospital for South Africa.

The arrangements for Lord Iveagh's Irish Hospital for South Africa have now been completed. The hospital will be under the charge of Sir William Thomson, surgeon-in-chief; Mr. George Stoker, second surgeon; Dr. James Coleman, physician; and Dr. Alfred Friel of Waterford, surgeon. Sir William Thomson has arranged to leave for Cape Town on Feb. 3rd.

Infringement of the Vaccination Acts.

A curious case came before the Belfast police-court on Jan. 19th. The Belfast Poor-law Guardians summoned a man for not having his child (born in Ireland on May 9th, 1899) vaccinated. The man tried to get out of the difficulty by obtaining an exemption certificate made out in England.

This document came from the magistrates in Newcastle-on-Tyne and stated that the parent of the child, residing in Belfast, had satisfied them that he conscientiously believed that vaccination would be prejudicial to the health of his child. The Belfast magistrate having pointed out that at the time that this exemption certificate was made out in England the child was in Ireland (where it still resided), and that the Act under which conscientious objectors claim exemption does not apply to Ireland or Scotland, fined the man 10*s.* and 12*s.* 6*d.* costs.

Londonderry Asylum.

At the monthly meeting of the committee of management of the Londonderry Lunatic Asylum on Jan. 19th a proposal came up to follow the precedent of County Donegal and County Tyrone and leave ample room in the existing asylum for the 139 city of Derry patients by providing accommodation for the 333 county patients in some of the almost empty workhouses of the county. The discussion was adjourned.

The Influenza Epidemic.

There is still no abatement in the number of persons attacked or in the virulence of the influenza visitation. From all parts of the north of Ireland the report is that the outbreak is more widespread and more severe than any since the first visitation.

Jan. 23rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The New Buildings of the Society of Surgery.

THE Society of Surgery has just entered into possession of its new buildings and for the future will occupy a mansion of its own where it will be absolutely in a position to receive and do honour to both members and guests. This is the fourth time that the society has changed its quarters. At its foundation in 1843 the society used to meet at the Hôtel de Ville where the Prefect of the Seine put a room at the disposition of the members. After the burning of the Hôtel de Ville the society held some meetings at the Practical School of the Faculty of Medicine, afterwards in the buildings of the Philomathic Society, and in 1852 in the buildings of the ancient Abbey of St. Germain des Prés, where also was held a school of dentistry. Here it remained until the present day, although somewhat straitened for room and under most inconvenient circumstances for the exhibition of cases. The new quarters are at 12, Rue de Seine, and are admirably fitted for their intended use. The room to be used for meetings is large and well lit, while artificial light is supplied by electricity. Behind the platform in the meeting room is a very large passage into which open two other rooms. One of these will serve as a committee-room and the other as a room for showing patients. On the first floor are three magnificent rooms which will serve for the library. The expenses of this new undertaking, which are very considerable, will be defrayed out of the funds which the society has in hand and a somewhat heavy personal contribution for which every member has made himself responsible. The medical press suggests that as the society has enlarged its place of meeting it should also become less select. The number of members is limited. Hospital surgeons themselves are not all members, but are only elected after a term of probation. As for surgeons who do not belong to the staff of a hospital—as, for instance, Doyen—no one, however celebrated, has ever been a member of the society. There is no definite rule to this effect, but at every election if a hospital surgeon presents himself he is nominated for election, for the society is entirely composed of his colleagues.

Crusade of the Medical Press against Travelling Spirit-bars.

The whole of the medical press is joining in a vigorous campaign initiated by the medical profession against alcoholism, and particularly against the refreshment carriages which some of the railway companies attach to their suburban trains, and which afford opportunity for workmen and employés to get drunk on the journey. The adoption of these carriages on the Government railways has called forth unanimous protestations. It is quite obvious that the chief way to lessen the consumption of alcohol is to lessen the opportunities open to idlers of getting it, and it might be hoped that the workman who is obliged to go home by train after his day's work would be able to escape in this way from the temptations offered by the public-houses which swarm in the vicinity of the factories. Once arrived at his home his surroundings begin to influence him all the more that he has no bad companions. Unfortunately the refreshment carriages do away with this beneficent interval, for firstly the drinks are much cheaper than in a public-house and the very carriage attracts the workman by being so much more comfortable than the ordinary carriage. The Northern Railway Company is doing its best to put down this new propaganda of alcohol and it is to be the more admired for this as its action deprives it of a certain amount of profit. The company has formally prohibited the use of these refreshment carriages on its system. There are, however, certain trains running successively over the lines of the Western Company and the Northern Company. On leaving the Western Company's terminus they pick up refreshment carriages belonging to the latter company, but when they arrive at Sannois, a station which belongs to the Northern Company, that company insists upon the carriage being uncoupled and the train is connected to it again on its return journey. As regards the other companies, however, it will be very difficult to make them give up an absolutely certain source of income solely with a view to forwarding social interests. It might be possible to lessen the evil by asking the Minister in charge of the railways to insist that the companies should make the price of places in their refreshment carriages very much higher.

Jan. 23rd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Ladies as Members of the Berlin Medical Society.

A RATHER tumultuous meeting of the Berlin Medical Society took place on Jan. 10th, when a motion standing in the names of Dr. Zadek and Dr. Freudenberg concerning the admission of ladies into the society was discussed. According to Article 4 of the by-laws only a duly qualified medical man or a doctor *rite promotus* is eligible for membership of the Berlin Medical Society. Ladies engaged in medical practice here are therefore doubly ineligible—in the first place because they have all obtained their qualifications abroad and are therefore regarded by the German law as unqualified practitioners, and in the second place because in the by-law in question the term of "doctor promotus" (not promota) is used. Dr. Zadek and Dr. Freudenberg proposed that medical men and medical women should be eligible. The committee of the society interpreted the by-law as meaning that only a duly qualified medical person was eligible, thus excluding not only medical women, but also holders of the M.D. degree without the State qualification. Dr. Zadek urged that the Society ought to regard not the diploma, but the scientific attainments of the candidate, and that it was unjust to reject ladies because they were not entitled to become legally qualified in the present state of the German law. Professor Virchow in the name of the committee said that the Berlin Medical Society was not a body instituted for the purpose of determining whether a given individual was professionally competent or not; they had only to inquire whether a candidate possessed the State qualification or not. If they were to receive an unqualified person on the ground of his or her scientific attainments they would create by this action a kind of medical qualification granted not by the State, but by the society. After a long and animated discussion the motion of Dr. Zadek was rejected and the motion of the committee was accepted by a large majority. The attendance of members of the society at this meeting was far greater than on ordinary occasions, and the galleries of the society's room were crowded with spectators, among whom were several ladies.

Legislation with respect to Private Laboratories.

The *Vossische Zeitung*, a Berlin periodical, reports that a Bill relative to laboratory work will be introduced by the Government. It is said that the Bill will contain provisions by which investigators will be compelled to take precautions

against the escape of pathogenic germs. The memorable outbreak of plague in the hospital at Vienna has induced the German Government to anticipate possibilities of this kind. The above journal rightly condemns legislation by which scientific research might be hindered, and is especially opposed to suppression of bacteriological work in private laboratories as suggested by influential parliamentary combinations. It draws attention to the fact that important researches not only in bacteriology but also in other branches of medical science have been carried on in private laboratories, for instance, the work of Professor Fritsch and Professor Hitzig on the localisation of function in the brain. Professor Koch himself whilst holding the obscure position of a medical officer of health in the province of Posen made his investigations on the nature of anthrax and other infectious diseases in his residence in the small country town of Wollstein. Nowadays there are well-equipped private laboratories in nearly every town of Germany and many medical men are prepared to examine sputa and other pathological material in their consulting-rooms. It would be very prejudicial to the profession if a new law prevented medical men from making bacteriological examinations elsewhere than in the State laboratories.

Precautions against the Plague.

A series of lectures and practical demonstrations on bubonic plague are being held in the Institution for Infectious Diseases. The duration of each course is 10 days and the Government has arranged that the heads of the State, provincial, municipal, and other public laboratories, and those assistants who have been engaged already at least one year in bacteriological work may attend the classes free of charge. The bacteriologists admitted to the classes at the expense of the Government are under an obligation to act as Government medical officers in the event of an outbreak of plague in this country. A number of non-official bacteriologists have also joined the classes at their own expense. Similar courses are held in the Imperial Health Office. In this way the Government hopes to have a staff of bacteriologists experienced in the recognition of plague.

Artificial Gout in Birds.

Dr. Kionka of the Pharmacological Institute of Breslau reports in the *Berliner Klinische Wochenschrift* that he has succeeded in producing gout in fowls by feeding them exclusively on meat. It has been made known by Ebstein, Kossa, and other authors that the administration of chromic acid, oxalic acid, and other toxic substances makes these birds gouty and Dr. Kionka tried to produce this pathological state by a special food. He therefore fed a series of fowls exclusively on horseflesh without fat and allowed them to drink as much water as they liked. The fowls were quite well at first, but after a few months symptoms appeared which were very like gout and which presented themselves in two different forms. In the first the birds walked very unsteadily and often fell down. On several occasions they were found lying on the ground with swollen joints and had no inclination for food. When a fit of this kind was over they seemed to feel better, their appetite returned, and the swelling of the joints decreased. In course of time the fits became more frequent, the feet of the birds were permanently swollen, they became unable to walk, could move about only by the help of their wings, and eventually died in a state of great emaciation. In the second form the fits were not so well marked, but characteristic tophi developed in the joints and between the tendons. Visceral gout was also observed with uric acid deposits in the serous membranes and in the kidneys. Dr. Kionka then investigated the metabolism of these birds and found that the quantity of uric acid excreted was between seven and 11 grammes per day. He thereupon administered calcareous substances in the form of egg-shells, the result being that the excretion of uric acid increased about 40 or 50 per cent. The administration of this substance in gout has been recommended by Professor von Noorden and its favourable influence on the excretion of uric acid has now been ascertained.

Simultaneous Intra-uterine and Extra-uterine Pregnancy.

A very rare case was lately shown to the Berlin Surgical Society by Dr. Hermes of the Moabit Hospital. A woman 30 years of age was admitted there in a serious condition, complaining of severe pain in the abdomen, which had come on during the previous 24 hours. The patient was very anæmic, her pulse was 120, and her abdomen was tympanitic. On the left side of the abdomen a tumour could be felt and after some hours laparotomy was performed. The case proved to be one of extra-uterine pregnancy and a mole was removed. The patient recovered after the operation and was discharged from the hospital in about six weeks. It was observed that menstruation which had ceased three months before had not re-appeared and that the uterus was still somewhat enlarged. When the patient returned after about a month the uterus had become still larger and it continued to grow during the following months. The symptoms pointed to the presence of a fœtus in the uterus and this diagnosis was verified six months later when the woman was delivered of a strong and normal child. In this case, therefore, extra-uterine and intra-uterine pregnancy occurred simultaneously, and it was very remarkable that the intra-uterine pregnancy came to a normal termination notwithstanding the operation which was performed on account of the extra-uterine pregnancy.

Jan. 22nd.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Large Ovarian Cyst.

AT a meeting of the Zürich Medical Society Dr. Brunner, house surgeon to the Krankenasyl, Neumünster, showed one of the largest ovarian tumours that has yet been operated on. According to Dr. Brunner's investigations as to the size and weight of tumours hitherto recorded, it stands fourth on the list of large ovarian tumours. The tumour in question was an ovarian cyst weighing a total of 71 kilogrammes, or 155 English pounds, 60 kilogrammes, or 132 pounds, of which were fluid contained in the cyst. The tumour (to which the body of the emaciated patient seemed to be only an appendage) was first punctured and on slight fever ensuing was subsequently totally removed. The patient stood the operation well and without shock and recovered fairly well for four weeks, then slowly declined in health, death ensuing three months after the operation. The fatal issue proved to be due to a cancerous growth round the womb, evidence of which was not forthcoming at the time of the operation. In the discussion which followed the fact was mentioned that after laparotomy for large tumours latent carcinomatosis sometimes becomes evident, perhaps kept latent by the pressure of the tumour or stimulated to rapid growth by the removal of pressure.

Swiss Ambulance for South Africa

At a meeting of the Red Cross Society at Aarau on Jan. 19th, it was decided to send an ambulance properly fitted out to the Transvaal. It will leave Genca on Feb. 1st by the steamer *Kaiser*, and is due at Lorenzo Marques at the end of the month. It is to proceed to Pretoria. The English authorities have declined the offer of an ambulance. Dr. Jean de Montmollin, Dr. René Koenig, and Dr. Fritz Suter have been elected as medical men. They have to serve for at least six months and have to send medical reports to the President of the Red Cross Society. A sum of £700 has so far been collected by voluntary contributions to defray the expenses in connexion with the sending of the ambulance and further sums will no doubt be forthcoming. The choice fell on medical men who had had special surgical training in work as house surgeons.

Jan. 20th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Influenza.

FROM day to day the "Ministero dell' Interno" (Home Office) is receiving confirmation, all too authentic, of the ever-widening diffusion of influenza. Up to last night it was northern and central Italy that contributed the heaviest contingents of cases, but now in Rome itself and farther south the disease is numbering a progressively increasing proportion of victims. This is due to the fact that the form it at first assumed was very mild but that later it manifested complications of a severer and less tractable type. Of the cities most gravely visited Leghorn heads the list

with no fewer than 15,000 cases and 700 in hospital. At Genoa the municipality has had to order the closing of all primary and secondary schools. Parma has 14,000 cases in the city alone and the hospital can admit no fresh ones. At Ferrara there are over 7000 cases, without including those of the suburbs or in the provinces, and there again the hospital has no room for more. At Pontedera (Tuscany) not a family has escaped and, as at Parma and Ferrara, the schools are closed from the illness of teachers and pupils alike. At Piacenza and Bologna the disease is becoming more extended as well as intensifying in character; at Turin it is taking a similar turn, and from 20 cases terminating fatally the proportion has risen to 40, and is still rising. All the public offices are "short of hands" from the illness of their *personnel;* not a house indeed is without one or more of its inmates in bed, and the schools are well-nigh empty though they are not yet officially closed. Besides Pontedera other centres of population in Tuscany are severely visited—Ponsacco, near Pontedera, for instance, having 700 cases, and Prato numbering so many on the sick list that the scholastic institutions have had to send away teachers and students alike on leave of absence. At Florence the disease has effected a distinct foothold, though up to last night its character was mainly of the "benignant" form. Even in the absence of the generally fatal pulmonary complications, however, the "neurotic note" which it had "struck" at its outset is still present—chiefly in the prostration which attends the general malaise and which falls heaviest on the very old or the very infirm. All this aggravation in the diffusion and intensity of the malady is coincident with a longer continuance of wintry weather than Italy has experienced for well-nigh a generation—the snow on the uplands lying deeper than it has been known to do for thirty years and adding a deadlier chill to the prevailing tramontana.

La Villa Igiea, Palermo.

Such is the name given to the sanatorium recently opened near Palermo for the Cervello treatment of tuberculosis and designed as one of the chief attractions to the "Golden Shell" now asserting its claims as a winter-city and special health-resort. THE LANCET of Jan. 13th, pp. 126–127, gave a brief account of the movement started in this sense by leading Palermitans, such as the Commendatore Florio and Baron Fassini, and it also referred to the deputation of British medical men who, as the guests of these gentlemen, had gone thither to inspect the sanatorium, its internal equipment and surrounding amenities, with a view to make their impressions known to the English-speaking world. For four days the members of the deputation resided at Palermo, mostly at the sanatorium itself, familiarising themselves with the *modus operandi* of the Cervello treatment at the Guadagna Hospital and also at the sanatorium, informing themselves as to the inception of the latter and, more particularly, as to its appointments, its special therapeutics, and its advantages as to site and climate. The building, on one of the beautiful slopes of the suburban village of Acquasanta, was begun seven months ago and, thanks to the energy with which the 700 workmen were employed, it is now all but complete—rising in a noble park and approached by a fine carriage-drive, from which excursions of the most varied, picturesque, and exhilarating kind can be made in directions not a few. Internally the sanatorium, or I should say the Villa Igiea, is equal in accommodation to the largest hotels of continental capitals and its appointments might be called luxurious were they not so rigorously hygienic in every detail, assuring, among other advantages, an antisepsis of the most perfect description. Every facility was afforded by the medical staff to their British colleagues for estimating the resources of the institution and forming a judgment as to the treatment therein pursued, and the attestation, volunteered by the deputation collectively and signed by its members individually, has, I understand, given much satisfaction to the Palermitan public, professional and lay: "We," the attestation ran, "after a three-days residence in the Villa Igiea have formed the opinion that the sanatorium is admirably well adapted for the cure of tuberculosis and other diseases of the lungs. It would be difficult to imagine as to climate and exposure a spot better calculated to attain this end, more especially in the practice of the 'open-air cure,' now recognised universally as of fundamental importance in the treatment of tuberculosis."

Jan. 23rd.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Decision in Kentucky with regard to "Osteopathy."

A DECISION has recently been rendered in a circuit court in Kentucky which appears to be the most far-reaching of any yet secured so far as the legal status of "osteopaths" in that State is concerned. An action was brought by a professor of the American School of Osteopathy at Kirksville, Missouri, against the State Board of Health of Kentucky to enjoin it from prosecuting him for practising his system in that State. By a section of the Kentucky statutes it is provided as follows: "Authority to practise medicine under this law shall be a certificate from the State Board of Health, and the said Board shall, upon application, issue a certificate to any reputable physician who is practising, or who desires to begin the practice of, medicine in this State who possesses any of the following qualifications: 1. A diploma from a reputable medical college legally chartered under the laws of this State. 2. A diploma from a reputable and legally chartered medical college of some other State or county, endorsed as such by the State Board of Health. 3. Satisfactory evidence from the person claiming the same that such person was reputably and honourably engaged in the practice of medicine in this State prior to Feb. 23rd, 1864. 4. Satisfactory evidence from any person who was reputably and honourably engaged in the practice of medicine in this State prior to Feb. 23rd, 1884, who has passed a satisfactory practical examination before said board." By another section of the statutes it is enacted that there shall be no discrimination against any institution, school, or system of medicine. The fact was admitted that the plaintiff held a diploma from the American School of Osteopathy at Kirksville, Missouri, and that the said school or college was legally chartered under the laws of that State. Therefore the question to be decided was whether the American School of Osteopathy at Kirksville, Missouri, could lay claim to the title of a "reputable" medical college. In order to determine this point fairly the Kentucky State Board of Health sent a committee of three of its most prominent physicians to investigate fully the Missouri College of Osteopathy. These medical men, after examining into its equipment, apparatus, and facilities for teaching; in fact, after making a full and complete and exhaustive investigation, unanimously came to the conclusion that the Kirksville School of Osteopathy was not a reputable medical college. In the cross-examination of the witnesses for the prosecution, including several of the professors, the true nature of the said college was thoroughly revealed, and it was clearly shown that its claim to being a reputable school of medicine could not be upheld. Among the witnesses for the defence were many of the foremost physicians of Kentucky, one of these being Dr. J. Matthews of Louisville, president of the American Medical Association. Dr. Matthews testified that he understood the theory and practice of osteopathy and that osteopathy was not a system for curing diseases, but one which was to be feared for dangerous results which would naturally be caused thereby. He further remarked that the osteopathic treatment as a system was very foolish and would be more likely to kill patients receiving it than to benefit them. The committee as a whole handed in a report on the Kirksville College of which the following is an abstract: "We found a building and appointments adapted to the teaching of anatomy, physiology, normal histology, and chemistry. We found bones and diagrams, but no dissecting-room or physiological laboratory, and were informed that the students were not accorded the privilege of dissecting the human body with the necessary accruing benefits of such work. ..... The histological and chemical laboratories were well equipped with chemicals, microscopes, and other apparatus. All this relates to the study of the healthy man, there being no pathological laboratory, pathological specimens, bacterial cultures, charts, or diagrams available for teaching pathology and morbid anatomy. ..... Materia medica, which embraces the knowledge of drugs and medicines, and therapeutics, which is their application to the cure of disease, are repudiated by this school, its teaching claiming that in the treatment of disease the physician has no use for drugs and medicines, since the brain of every human being is a drug-store ready

to his hand. ..... Without a dissecting-room, without the privileges of seeing and handling the muscles, vessels, nerves, glands, and viscera of the body the committee cannot understand how the graduates of this school can have a practical knowledge of anatomy. ..... The Hon. Sterling B. Tovey, the judge of the court, after an eloquent summing up gave judgment for the defendants, the State Board of Health of Kentucky, declaring in the course of his speech that it is the policy of Kentucky to exclude charlatanry, and empiricism, and quackery from the State. There are unfortunately several States in America which not only legalise but encourage osteopathy, to the detriment alike of the general public and of the medical profession. It will be remembered that Kentucky has ever taken a firm stand against the practice of osteopathy within her boundaries, and reference has already been made in THE LANCET[1] to a decision of a Kentucky judge who, when a member of the osteopathic brotherhood charged with contravening the Kentucky Act in regard to the practice of medicine excused himself by asserting that he was merely manipulating with his hands, ruled that "any person who for compensation professes to apply any science which relates to the prevention, cure, or alleviation of the diseases of the human body, is practising medicine within the meaning of the statute." These decisions and the evidence of prominent medical men should open the eyes of the community at large to the uselessness of the treatment provided by professors of osteopathy.

Reforms in the Medical Department of the United States Army.

The American-Spanish war revealed many defects in the constitution of the medical department of the United States. In the first instance it was demonstrated that the number of army medical officers was inadequate to the needs of the regular army alone. The army at the outbreak of the war numbered 25,000 men and the medical corps consisted of 192 commissioned surgeons. The army was immensely increased by volunteers and the dearth of medical men had to be supplied by physicians taken from civil life. At the present time there are over 400 civilian surgeons doing duty with the American army. Until the Philippine campaign is brought to an end the Government will not decide as to the strength of the standing army of the United States, but there can be no doubt that it will be very considerably increased. This, however, is not the extent of the difficulty which faces the United States authorities. In order to meet any serious emergency which may arise the standing army will not alone be depended upon and the same policy will be pursued as was pursued in the war with Spain—that is, volunteer forces will be called out. The fact that an army surgeon requires special training to be able to fulfil his duties in an efficient manner is too palpable to need emphasis. Not only has he to act as physician and surgeon, but at the same time the sanitation and hygiene of camps falls within his sphere of work. Thus a medical man taken from civil life is suddenly thrust into a position for which he has had no training whatever except in so far as his knowledge of surgery is concerned. The evil results of following such a course were fully shown in the war with Spain. The Surgeon-General of the United States Army is about to present at the present session of Congress three Bills with a view of remedying the existing defective system. The first provides for an increase in the medical department of the army, the second secures regulations in regard to the efficiency of the department, and the third is for the raising of acting assistant surgeons to the rank of captain in the volunteer service. An increase in the medical department of the army is needed at once, for, as the *New York Medical Record* points out, "13 new posts have been established upon the sea-coast in the Department of the East and 10 have been established in the Department of the Columbia, including Alaska. There are now 11 independent garrisons in Porto Rico and a large number of independent commands in Cuba and the Philippines. These independent garrisons and commands require medical officers of experience and ability, and in addition all the higher executive offices of the medical department have to be filled with men of a rank commensurate with the positions which they occupy. It is absolutely impossible to do this with the present number of medical officers, hence the request of the surgeon-general for legislation as to an increase of the corps."

Cigarettes in the United States.

The analytical report of THE LANCET Sanitary Commission on American Cigarettes has aroused a considerable amount of interest in the United States. The "yellow" journals of the country have for a long time done their utmost to prejudice the minds of the general public against the cigarette. They have credited it with causing nearly every ill which human flesh is heir to. According to the accounts of some of the most sensational of these papers the cigarette is responsible for much insanity and is productive of crimes of all sorts and kinds from murder downwards. Of course many, or rather the majority, of these blood-curdling descriptions exist only in the imagination of the writers or are exaggerated and garbled out of all similitude of truth merely to pander to the love of the uncanny which has been cultivated in the minds of American readers of a certain class by the circulation of these vividly exciting journals. However, they have served their purpose and cigarette-smoking is regarded in the United States with the greatest distrust, and the cigarette itself is believed by the ordinary individual to be composed of the most pernicious, indeed poisonous, materials. The matter was taken up in New York some little time ago and various brands of cigarettes were tested analytically with the result that no injurious substances were found either in the tobacco or the paper. The finding of THE LANCET Analytical Sanitary Commission will doubtless go far towards rehabilitating the cigarette—that is to say, so far as its composition is concerned.

Jan. 13th.

[1] THE LANCET, Sept. 4th, 1897 (p. 607), and March 19th, 1898 (p. 804).

Obituary.

HENRY HANNOTTE VERNON, M.D., F.R.S. EDIN., M.R.C.S. ENG., L.M., J.P.,

MEDICAL OFFICER OF HEALTH OF SOUTHPORT.

DR. HENRY HANNOTTE VERNON, medical officer of health of Southport, died on Jan. 16th after a short illness, at his residence, Shipbrook, Cambridge-road, Southport. He had not been of robust health for a few months, but no anxiety as to his life was felt. He was nearly 68 years of age and was able to discharge his duties as medical officer of health up to a few days previously to the fatal termination, one of his last acts being to attend a committee meeting in that connexion.

Dr. Vernon was a well-known, popular, and enthusiastic medical officer of health, and was appointed to his post in Southport in 1873, devoting the whole of his time to the duties in 1888. He was born on March 25th, 1831, at Chatburn, near Clitheroe, and was the son of a Church of England clergyman—the Rev. William Vernon. After his school education he proceeded to Edinburgh to undergo his medical education, and in 1853 he took the M.D. degree. He always had the greatest affection for his *alma mater*. He became M.R.C.S. Eng. in 1854, and was a Fellow of the Statistical Society and of the Royal Society of Edinburgh and of the Incorporated Society of Medical Officers of Health. He had also been President of the Lancashire and Cheshire Branch of the British Medical Association and of the North-Western Branch of the Incorporated Society of Medical Officers of Health, and was a member of other learned societies. At the commencement of his career he practised in London and held appointments at St. Mary's Hospital, the Great Northern Hospital, and the Bloomsbury Dispensary. Later, however, he removed to Ashton-under-Lyne, where he had a successful career and became a member of the town council and a Justice of the Peace. In 1868 he went to reside in Southport, and after the passing of the Public Health Act of 1872 he was appointed medical officer of health, a position which he has worthily and successfully filled. During the whole of his official life he was on the best terms with the other officials, the members of the Health Committee, and of the corporation generally. He was a great advocate of the cause of education and was concerned in the establishment of the Southport Proprietary Schools, and as chairman of the

Birkdale School Board did much good and useful work, as he did also in connexion with the Southport Literary and Philosophical Society of which he was at one time president. He was also a member of the Board of Management of the infirmary and was a late honorary medical officer of the Southport Convalescent Home. To put it comprehensively, he was more or less connected with every movement which had for its object the development and improvement of Southport, and was the trusted adviser in all sanitary matters to the corporation, and as was said of him by the mayor in moving a vote of condolence to his family, "He was a man of generous instincts and a man of very considerable literary ability. He was a man whom they could esteem in private and in a public capacity, and a man whose friendship was extremely firm." Dr. Vernon leaves a widow, two sons, and two daughters to mourn their loss. The two sons are members of the medical profession.

ROBERT COLLUM, M.D. GLASG., M.R.C.P. LOND., M.R.C.S. ENG.

DR. COLLUM, whose death at Surbiton on Jan. 12th, in his 84th year, we have already recorded, belonged to an Enniskillen family and received his medical education at Trinity College, Dublin, where he was twice a gold medallist. He was admitted a Member of the Royal College of Surgeons of England in 1836. He also studied at Glasgow University, graduating there as M.D. in 1837. In the latter year he entered the Bombay Medical Staff Corps of the Honourable East India Company's service and was attached to Sir Charles Napier's staff throughout the conquest of Scinde. He was the only medical man to accompany Sir Charles Napier upon his setting out for Scinde in the steamship *Zenobia* which left Bombay on Sept. 3rd, 1842, with 200 soldiers. Soon after getting to sea cholera broke out on board and in eight days 64 soldiers died, in addition to sailors, women, and children. Dr. Collum served in the war, was mentioned in despatches of the battle of Meanee, and acted as interpreter to the forces in Arabic, Hindustani, and Persian. Whilst in Scinde he had medical charge of all the troops as they returned from the first Afghan war and at the conclusion of the campaign he was appointed surgeon and superintendent to their Highnesses the ex-Ameers of Scinde, and remained in that post for seven years. He was also superintendent of the medical department at Aden, surgeon and superintendent of the Agency Jail at Hazareebaugh, Bengal, and assay master at the Bombay Mint. In 1857 he retired from the service and upon his return to England he was elected President of the Society of Members of the Royal College of Surgeons, which position he occupied for seven years. He also held the appointments of physician accoucheur to the Paddington Maternity and physician to the Western General Dispensary, and was for 33 years medical officer to the Kingston-on-Thames branch of the Metropolitan Convalescent Institution. He became a Member of the Royal College of Physicians of London in 1859.

CHARLES POPE WALKER, M.B. DURH., M.R.C.S. ENG., MAJOR, R.A.M.C.

THE death is announced from dysentery at Ladysmith on Jan. 5th of Major Charles Pope Walker, R.A.M.C. He was the youngest son of the late J. N. Walker of Bedford and was born in 1859. He obtained his medical education at Guy's Hospital, whence he qualified, becoming M.R.C.S. Eng. in 1883, and L.S.A. in 1885, and at Durham, where he graduated as M.B. In 1886 he entered the medical service of the army as a captain in the Royal Army Medical Corps. In 1887 he went to India and was attached to an English regiment serving at Quetta and afterwards in the North-West and Central Provinces. In 1892 he returned to England and was then attached to the Guards in Ireland. In 1895 he served in the Mauritius where he remained until 1898 when he went to the Cape and afterwards to Natal. In November, 1899, he proceeded with the troops to the front and had charge of the hospital at Dundee and was present at the battle of Elandslaagte, afterwards retiring with the forces from Dundee to Ladysmith where he rendered valuable medical services. He obtained the rank of Major in July of last year and married in 1895 the third daughter of the late Colonel W. Tamplin of Brighton. He was a keen and most fearless sportsman with big game and during his Indian career he was noted for the number of tigers and bears which fell to his rifle.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In January the following candidates passed in the subjects indicated:—

Surgery.—T. P. Allen (Sections I. and II.), Manchester; J. R. Bentley (Sections I. and II.), Middlesex Hospital; C. H. Brookes (Sections I. and II.), Durham and St. George's Hospital; A. McC. Dallas (Section II.), Guy's Hospital; J. M. Edwards (Section II.), Charing-cross Hospital; W. St. G. G. Hill, St. Mary's Hospital; D. T. C. Jones (Section I.), University College Hospital; E. C. Scarlett (Section II.), Royal Free Hospital; H. E. Weston (Section II.), St. George's Hospital; and T. R. Wilshaw (Section I.), Birmingham.

Medicine.—F. G. Aldrich (Section II.), Charing-cross Hospital; A. St. J. Bateman (Section I.), King's College Hospital; C. H. Brookes (Sections I. and II.), Durham and St. George's Hospital; P. Cator, St. Bartholomew's Hospital; D. T. C. Jones (Sections I. and II.), University College Hospital; and E. C. Scarlett (Section II.), Royal Free Hospital.

Forensic Medicine.—C. H. Brookes, Durham and St. George's Hospital; A. McC. Dallas, Guy's Hospital; D. T. C. Jones, University College Hospital; and L. G. W. Tyndall, St. Mary's Hospital.

Midwifery.—A. H. Bell, Cork and Guy's Hospital; P. C. Burgess, Middlesex Hospital; A. A. F. Clarke, St. Thomas's Hospital; J. S. Goodall, Middlesex Hospital; K. Grube, Bonn; D. T. C. Jones, University College Hospital; E. R. Risien, St. Bartholomew's Hospital; J. Waters, Middlesex Hospital; and H. Whittaker, Cambridge.

The diploma of the Society was granted to the following candidates, entitling them to practise Medicine, Surgery, and Midwifery:—Messrs. J. R. Bentley, P. Cator, J. M. Edwards, K. Grube, W. St. G. G. Hill, E. C. Scarlett, H. E. Weston, and H. Whittaker.

UNIVERSITY OF CAMBRIDGE.—At the Congregation held on Jan. 18th the following graduates in arts were admitted to the degree of Bachelor of Surgery:—

Edwards Williams Hedley, King's; Alexander Thomas Fraser and Richard Ernest Sedgwick, Gonville and Caius; Redcliffe Nathan Salaman, Trinity Hall; and John Everard Linnell, Selwyn Public Hostel.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.—At a stated meeting of the President and Fellows of the Royal College of Physicians of Ireland, held on Jan. 12th, the following gentlemen were admitted as Members: E. J. McWeeney, M.D. R.U.I., and W. A. Winter, M.D. Dub.—At a special meeting of the President and Fellows of the Royal College of Physicians of Ireland held recently the President (Dr. J. W. Moore) was nominated to represent the College upon the Committee of Inquiry into the Health of Dublin which his Excellency the Lord Lieutenant suggested should be appointed by the Local Government Board. The following resolutions were adopted:—

That the President and Fellows of the College reiterate the deliberate opinion expressed in the conjoint report of the Royal College of Physicians and the Council of the Royal College of Surgeons (Ireland) on the death-rate of Dublin, 1881.

That the city of Dublin is, and has been, unhealthy in an excessive degree and its extraordinary death-rate is attributable, not to errors of computation or irremediable circumstances, but to long-continued disregard of sanitation and the omission to enforce the legal means provided for a remedy.

The President and Fellows are further of opinion that the excessive mortality within the city demands from the civic sanitary authority the most firm, energetic, and persevering execution of the powers entrusted to it to secure even a partial amelioration of the existing evils; and the health of the city will be likely to deteriorate still further unless dealt with by a new and radical method much more vigorous than that which has hitherto been adopted.

LITERARY INTELLIGENCE.—Mr. H. K. Lewis announces that he is about to publish a work by Dr. S. A. Knopf of New York on "Pulmonary Tuberculosis, its Modern Prophylaxis, and the Treatment in Special Institutions and at Home." This work contains descriptions and illustrations of the most important Sanatoria of Europe, the United States, and Canada. Also "Letter-, Word-, and Mind-Blindness," by Dr. James Hinshelwood; a second edition of Dr. G. E. Shuttleworth's book on "Mentally Deficient Children, their Treatment and Training," much enlarged and revised; and a translation of Professor Edinger's "Anatomy of the Central Nervous System of Man and of Vertebrates in General."

BERI-BERI AT FALMOUTH.—On the arrival of the Norwegian barque *Recovery* in Falmouth on Jan. 16th from Punta Arenas the port medical officer found several of the crew suffering from beri-beri and two of the officers were taken to the Sailors' Home Hospital.

DEVON AND EXETER HOSPITAL.—The freedom of the city of Exeter was presented on Jan. 16th to Lord Northcote (Sir Stafford Northcote) upon his appointment as governor of Bombay. In the evening he was presented with a cheque for 300 guineas to endow a "Northcote" bed in the Devon and Exeter Hospital, the presentation taking this form at his request.

MEDICAL MAGISTRATES.—Mr. G. D. Beadnell, L.R.C.P. Edin., M.R.C.S. Eng., of Denman Island, B.C., has been placed on the Commission of the Peace for the province of British Columbia.—Mr. George Gavin Morrice, M.D. Cantab., M.R.C.P. Lond., consulting physician to the Salisbury Infirmary, has been appointed a magistrate for the county of Kincardine.

EASTERN DISPENSARY, BATH.—The annual meeting of this institution was held on Jan. 18th, under the presidency of the Rev. H. Winwood. The medical report stated that 4892 patients had been treated at the dispensary and that 792 patients had been visited at their own homes, both numbers being in excess of the corresponding ones for 1893. The financial statement showed that the income amounted to £706, and there was a favourable balance of £50.

WEST CORNWALL INFIRMARY AND DISPENSARY, PENZANCE.—The annual meeting of this institution was held on Jan. 17th, under the presidency of the Rev. Prebendary Hedgeland. The report stated that during 1899 there were 165 in-patients admitted, against 176 in 1898, and that 2171 out-patients had been treated as compared with 1991 in 1898. The financial statement showed that the total receipts amounted to £946, while the expenditure was £898.

BIRMINGHAM AND DISTRICT GENERAL MEDICAL PRACTITIONERS' UNION.—The following officers have been elected for the year 1899–1900:—President: Dr. W. E. Parkes. Vice-Presidents: Mr. H. R. Leech and Mr. R. A. Newton. Honorary Treasurer: Dr. W. H. Line. Corresponding Secretary: Dr. E. D. Kirby. Organising Secretary: Mr. J. Neal. General Secretary: Dr. Robertson. Members of Council: Dr. Langley Brown (chairman), Dr. Adamson, M. E. O. Bark, Mr. Chadwick, Mr. Hollinshead, Mr. A. G. C. Irvine, Mr. H. G. Morris, Dr. Hill Norris, Mr. A. Oakes, Mr. H. W. Pooler, Mr. H. Simms, Mr. Weston, Mr. Whitcombe, and Mr. Wilkes.

EAST SUBURBAN MEDICAL PROTECTION AND MEDICO-ETHICAL SOCIETY.—The second annual report of this society commences by calling attention to the fact that the society was established in order "to maintain the status of registered medical practitioners, to assist them in carrying on their profession to the advantage of themselves and the general public, and to organise the profession for united action." It came into existence owing to the exertions of Mr. Charles Allen in combating the abuses of the Plaistow Maternity Home, and differs largely from the Medical Defence Union and the London and Counties Medical Protection Society inasmuch as "individual defence," though not neglected or ignored, is not the prime feature of the society. It is rather a "society with a policy," that is, one formed to gather together and focus the opinions of its members, and where possible to take united action upon those lines. Important questions in medical politics have been considered at various meetings, as, for example, at the fourth general meeting, when Mr. Victor Horsley delivered an address on the registration of midwives, and a very definite opinion upon the proposed legislation was expressed by his hearers. The increasing abuse of hospitals—the out-patient department especially—has also received attention, and the council took the opportunity of inviting Mr. Loch, the secretary of the Charity Organisation Society, to express his views upon the subject under the title of the Use of Medical Charities, when it appeared, as was remarked by more than one speaker at the meeting, that Mr. Loch's opinions to a great extent coincided with those held by the profession. As the result of representations made by the council and district committees of the society a municipal supply of antitoxin is now kept by the medical officers of health of Plaistow, Canning Town, West Ham, East Ham, and Ilford, this supply being available for the use of any practitioner for his poorer patients free of charge on certain conditions. Several other instances of the activity and energy of the society are to be found in the report.

CONVALESCENT HOME AT PAIGNTON.—Mr. Washington Singer has fitted up a large villa at Paignton which will accommodate 20 convalescent soldiers. He will maintain it entirely at his own cost.

CARDIFF INFIRMARY.—At a special meeting of the executive committee of the Cardiff Infirmary held on Jan. 19th, the new rules which have been recommended by a sub-committee were considered. It was resolved:

That no member of the honorary medical staff shall hold office after attaining the age of 60 years. No physician, surgeon, ophthalmic surgeon, gynæcologist, or dental surgeon shall hold office for a longer period than 20 years.

PRESENTATIONS TO MEDICAL MEN.—Mr. H. T. M. Alford, L.R.C.P. Lond., M.R.C.S. Eng., medical officer for some time past of the Provident Dispensary at the Weston-super-Mare Hospital, was on Jan. 10th, on his recent resignation of that post, presented with a portmanteau, fitted up as a dressing-case, and bearing his initials on a silver plate, as a parting gift from a large number of patients and friends in testimony of their regard and esteem.—Mr. William Black Jones, M.D., B.S., L.R.C.P. Lond., M.R.C.S., D.P.H. Eng., of Llangammarch Wells, Breconshire, and Kelross-road, Highbury, London, has been presented with a writing-desk by the members of the Toynbee Hall (London) branch of the St. John Ambulance Association as a mark of appreciation for his services as honorary lecturer of the class.

ROYAL METEOROLOGICAL SOCIETY.—The annual meeting of this society was held on Jan. 17th at the Institution of Civil Engineers, Great George-street, Westminster, Mr. F. Campbell Bayard, LL.M., President, being in the chair.—Mr. Bayard, in his presidential address, discussed the meteorological observations made at the Royal Observatory, Greenwich, during the 51 years 1848–1898, and brought out in a novel way many interesting features in the variability of the various observations of the barometer, maximum and minimum temperatures, relative humidity, and direction of the wind, and rainfall. These were shown in a diagrammatic form on the screen by means of a number of lantern slides. The address was also illustrated by various views of the Royal Observatory and of the instruments employed.—Mr. G. J. Symons, F.R.S., was elected President for the ensuing year.

THE CORPORATE AND MEDICAL REFORM ASSOCIATION, LIMITED.—The annual meeting of this association, adjourned from Dec. 30th, 1899, was held at the Holborn Restaurant on Jan. 17th Mr. George Jackson, the retiring President, being in the chair.—The annual report was unanimously adopted. Since the last report the membership of the association had increased from 40 members to 316, including 10 affiliated societies, in the following order of joining: New Cross, Beckenham and Penge, Gateshead, Ilford, Mid-Tyne, Hartlepools, Wood Green and District, Hull, Bradford and West Riding Medical Union, Newcastle Medical Ethical Society. The arrangements for affiliation had been found to work harmoniously and the finances were in a satisfactory position and increasing stability. The officers and council were unanimously re-elected. Dr. Jas. A. Myrtle, J.P., Mayor of Harrogate, President-elect 1898–99, then took the chair as President and delivered a brief address, in which he mentioned the rapid increase of the association not only in numbers but in its influence for good in the field of medical politics, and predicted still more rapid increase in both respects in the future. Mr. George Jackson, was chosen President-elect, and Dr. J. Higham Hill, President of Council. The annual dinner took place at the Holborn Restaurant, when Mr. George Brown, Senior Direct Representative for England, was the guest of the association.

THE PRESERVATIVES AND COLOURING MATTERS IN FOOD.

EVIDENCE BEFORE THE DEPARTMENTAL COMMITTEE.

THURSDAY, JAN. 18TH.

THE Committee appointed by the President of the Local Government Board to inquire into the question of preservatives and colouring matters in food met to-day, with Sir HERBERT MAXWELL, M.P., in the chair, and examined three more witnesses.

Mr. T. F. BLACKWELL, chairman of Messrs. Crosse and Blackwell, stated in examination in chief that his firm did not use preservatives in making their jams and therefore it was not within his knowledge that they were used. At the same time it was the fact that the firm were frequently offered certain preservatives for use in jam. In his opinion chemical preservatives were quite unnecessary. There were two methods of preserving fruit—one was to boil the fruit pulp and put it away in stock tins, treated simply with heat, and the other was to boil it and put it away in large bottles or casks fumigated with sulphurous acid gas. In the same way he considered chemical preservatives in meat to be quite unnecessary and his firm never used them. Though he did not see the need for prohibition he thought a declaration of their presence might be required on the label. His firm sealed their potted meats and things of that kind in hermetically closed tins or jars, and they all underwent a process of preserving by heat, but any chemical addition was quite unnecessary. Peas and other vegetables were coloured with sulphate of copper to meet the public taste. For many years his firm had dealt in peas which were uncoloured, but while they sold large quantities of them abroad they were not at all popular in this country. They sold French vegetables in bottles which were all slightly coloured and they stated upon the price list that they were prepared in France and were artificially coloured. They should be quite prepared to make this statement upon the label on the bottle. The only colouring matter used in jam was extract of cochineal which he believed to be perfectly harmless; it was used to secure uniformity of colour and only a very small quantity of it was required. The firm were continually being offered both at home and abroad aniline colours. They had an article called lemon squash which was free from chemical preservative and when occasionally it became mouldy and customers complained they told them that this condition could only be avoided by the use of chemical preservatives which they considered would be injurious.

By Dr. BULSTRODE: In his opinion the public did not pay very much attention either to preservatives or colouring matters so long as they got a pleasant looking and tasting article, but he might say that his firm had no objection to both colouring matters and preservatives being declared on the label.

By Dr. TUNNICLIFFE: Even in the case of apricot pulp coming from abroad his firm took care to see that it contained no preservative.

Mr. JOHN TUBB THOMAS, county medical officer of health of Wiltshire, said, in reply to the CHAIRMAN, that both as a medical practitioner and as a public officer he had given considerable attention to the question of preservatives in food. When in practice in Newport, Monmouthshire, he found serious results from boric acid in milk, especially in the case of children. He had children under treatment suffering from diarrhœa and also from convulsions and he prescribed for them boric acid with their food in small doses ranging from one to five grains. Instead of improving they got worse. The diarrhœa increased, the children became emaciated, and some of them died. He made inquiries and he found that the milk used by all the children contained a further proportion of boric acid. He ascertained this by quantitative analysis and also by interviewing the milkman. He had experimented with boric acid upon himself and though he was in good health at the time his digestive organs became entirely upset; he suffered from diarrhœa and headache and there were irritation of the skin and other disagreeable symptoms. The conclusion he had come to was that boric acid should certainly not be used in milk. In working-class communities he found that of the milk sold in the street more than 85 per cent. was consumed by children or by adults in bad health, and of course this milk might be dosed several times with boric acid and produce many serious results. He therefore advocated the entire prohibition of preservatives in new milk and he said that even in large towns to which the milk was brought from a distance their use was quite unnecessary. He regarded preservatives as a premium upon filth. He was perfectly convinced of this, that a very large number of the medical men of England if they knew more about the subject would have been able to give that Committee direct evidence as to the effect of boric acid. Many of them knew little about the subject, and others had been misled by the literature distributed amongst them gratuitously by the syndicate in America interested in the sale of boric acid. He handed in to the Committee a copy of a pamphlet which had been so distributed. In the case of the farmer the man was given to understand that these preservatives were perfectly harmless and he dosed his milk with them by simple rule of thumb. He had one instance where the milk contained as much as 225 grains of pure boric acid to the gallon. As a sanitarian he said that if preservatives were allowed they would simply be putting back the hands of the clock so far as sanitary improvements in rural districts were concerned. He did not see how a simple declaration of the presence of the preservative would do any good, because people would be told in the literature of this wealthy syndicate that the milk was all the better for the addition of boric acid. He admitted, of course, that milk would keep all the longer for the preservative, but he did not want the milk kept longer; he wanted it to be consumed as soon as possible after it left the cow. He thought all milk should be consumed within 48 hours of the time it left the cow. His feeling was not quite so strong about butter because he realised that in the case of large communities it might be necessary to use preservatives. If he found that large companies were regularly supplying butter free from preservatives, then, of course, his opinion would be modified. As to colouring, he did not think that milk should be coloured even with a harmless matter because this was done simply to make the purchaser imagine he was getting a superior article, and he should prohibit colouring in butter. Formalin was being more and more used by dairymen. He had not had so much experience of formalin, but he did not approve of it, being of opinion that it was injurious.

By Dr. BULSTRODE: It was only the children who took milk from a particular source who suffered. Others living in the same district who were supplied from a different source did not suffer. His view was that if medical men were aware of the substances used as preservatives they would be on the look-out for mischief and would be able to provide this Committee with direct evidence, but at present they were unaware of a possible cause of mischief. He could say from his own knowledge that there were farms which on account of their bad water-supply and state of filth could not produce milk and send it a distance without recourse to preservatives, and he asserted that if the Dairies, Cowsheds, and Milkshops Order were duly carried out and proper precautions were taken no need would exist for preservatives.

By Dr. TUNNICLIFFE: He knew that boric acid was used with advantage in cases of diarrhœa, but it was most essential that the physician should have control of the amount consumed, and he could not have this control if boric acid were taken in the milk and other food. He did not consider that experiments on lower animals gave results of very much value in this connexion, and very often they were not carried out with a sufficiently open mind.

Dr. WILLIAM HENRY CORFIELD, Professor of Hygiene and Public Health in University College, London, and medical officer of health and formerly public analyst for St. George's, Hanover-square, said, in reply to the CHAIRMAN, that he had given special attention to salicylic acid and boric acid. He had had experience of the external effects of the former. It was a slightly irritating substance and he had had experience of it for the removal of corns and warts. He had had very little experience of it in internal use. As a physician he regarded salicylic acid as a most undesirable article to introduce into food. It was extremely undesirable that either it or boric acid should be consumed by invalids or children and even if a limit were prescribed it would be impossible to secure its observance. If a person were taking a small fixed quantity of salicylic acid day by day it was not certain that he would get rid of it each day; the evidence was that there was a tendency to accumulation in this drug. Of course, with this as with other drugs a person might accustom himself to its use, but that was no reason why they should allow it to be placed in milk as a preservative. Though he could not say from his own knowledge he believed that the system could not void more than a certain amount of boric acid in 24 hours. It was undesirable that anyone should consume more than he could get rid of and, besides, boric acid was obviously not a food. He should advocate the prohibition of boric acid as a preservative unless it could be clearly shown that the drug was perfectly harmless in any quantity that it was possible to have it added. He regarded salt as upon quite a different level, for salt was part of the human body and a certain amount of it was necessary to existence. He did not think that prohibition would have a serious effect upon the milk-supply of large towns because methods could easily be devised—methods of refrigeration and so on—which would enable milk to be brought from a distance without preservatives. At one time boric acid was largely used internally, but now it was very little so used. He had the authority of the partner in a large firm of wholesale druggists for this latter statement.

By Dr. BULSTRODE: If preservatives were used in sufficient quantity to produce their antiseptic effect upon the food, to prevent the change of that food from one form to another, they must to a certain extent interfere with the digestive change in the food, although the actions were not exactly the same. He could not say that this view had been altogether borne out by recent experiments, but while that was so he did not think that experiments upon lower animals should decide this matter. In the absence of direct evidence to the contrary he should assume that the drug was harmful.

By Dr. TUNNICLIFFE: His view was that it was incumbent upon the advocates of preservatives to prove their harmlessness. His greatest objection was against preservatives in milk because milk was so important an article of food for invalids and young children, and though he objected to their presence in butter his objection was not so strong because in butter they were not likely to do so much harm.

The Committee then adjourned.

FRIDAY, JAN. 19TH.

The Committee met again to-day, Sir HERBERT MAXWELL presiding.

Mr. WALTER COLLINGWOOD WILLIAMS, public analyst, Liverpool, examined by the CHAIRMAN, said that he and Dr. Campbell Brown examined every year about 3000 samples of food of one kind and another taken in the city of Liverpool and various parts of the administrative county of Lancashire. Last year in 1052 samples of new milk they only met boric acid in four cases, and in 200 samples of skim milk they met with it in nine cases. So far as their researches went it would appear that the fresh milk trade in Liverpool was carried on almost entirely without the use of preservatives and, strange to say, it seemed that borates were used more in winter than in summer. They had three cases in January, three in February, one in March, four in April, four in May, four in June, and none in the remaining months until December, when they had one case. They had obtained a conviction for the use of formalin in milk, and they had endeavoured, but without success, to obtain one for the use of salicylic acid in certain temperance wines, while with regard to boric acid he did not think that any prosecution had been instituted. He would not say that in Liverpool the use of formalin in milk was illegal, but this conviction had been obtained and its effect had certainly been to check its use. During last year they had examined six samples of cream and had found boric acid or borate in proportions varying from 17 to 38 grains to the pint, the proportion in winter being rather larger than in summer. One sample was quite unfit for use, for while it was not sour it contained curd. In his

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opinion the appearance of staleness was kept away by the preservative. During the period from May to December they examined about 200 samples of butter expressly for boric acid and borate and found 56 with it in proportions ranging from two to 62 grains per pound. Recently they examined about 20 samples of jam and found 15 of them preserved with salicylic acid, the quantity varying from a quarter of a grain in strawberry to four and a half grains in black-currant per pound of jam. The amount of salicylic acid in some temperance drinks usually consumed by children was perfectly astounding. In lime-juice cordial they had found from 20 to 108 grains per gallon, in lemon squash 50 grains per gallon, in ginger wine from 49 to 115 grains per gallon, in raspberry wine from 87 to 133 grains per gallon, in orange wine from 94 to 106 grains per gallon, and in black-currant wine from 47 to 140 grains per gallon. He had performed some artificial experiments with regard to digestion and found that salicylic acid had a very prejudicial effect in certain cases. As to colouring, his experience went to show that peas were almost invariably coloured by compounds of copper—a practice which he thought required very strict control. He had seen peas coloured by so small a proportion as a quarter of a grain of sulphate of copper per pound, and if this sufficed, as it apparently did, he did not see why a larger quantity should be used.

Dr. JAMES ROBERT KAYE, Wakefield, medical officer of health of the West Riding of Yorkshire, was the next witness and in answer to the CHAIRMAN said that the area for which he was responsible had a population, roughly speaking, of 1,250,000. When this Committee asked for information he set on foot an inquiry into the question of milk and butter with which some progress had been made, though it was not yet completed. This inquiry showed that the use of preservatives was greatly on the increase and especially so during the last two or three years. They had found milk-dealers, dairymen, farmers, butchers, and even tripe-dressers using them. Among 17 samples of milk taken in hot weather they found 13 with boric acid or formalin, while 13 samples taken in similar conditions, but during the months of October and November, were entirely free from either preservative. These samples were taken from vendors in the streets or from milk-shops. The majority of the people to whom he spoke on the subject said the preservatives were necessary, though he could not say they had convinced him of this; indeed, his opinion was that preservatives in dairy produce were not necessary, and he certainly considered them undesirable. He was afraid the provisions of the dairy and milkshops regulations were not very stringently enforced and their evasion was rather facilitated than otherwise by the use of preservatives. When a man employed them he thought, for instance, that cold instead of boiling water sufficed to clean his vessels. Indeed, he found that people in the dairy trade had wonderful ideas about preservatives apart altogether from their preserving effect—ideas about their counteracting insanitary conditions in cowsheds, about the excessive use of brewery grains, about their effect upon milk taken from cows with diseased udders, and the like. He had prepared a series of tables for the consideration of the Committee. The first of these gave a few examples of advertised preservatives. One of them was advertised as "medically guaranteed, absolutely harmless, and pure" and as "extensively employed in the hotel, household, restaurant, and ship's cabin." This preservative contained 85·5 per cent. of boric acid and 14·5 per cent. of borax, and the directions for use were for milk seven grains per pint, for butter 31 grains per pound, and for sausage 30 grains per pound. Another of these preservatives was advertised as "harmless and effective, safe and reliable, none need be afraid to use it." It also contained 85·5 per cent. of boric acid and 14·5 per cent. of borax, and the directions for use were for sausage, &c., 44 grains per pound and for gravy, soups, &c., nine grains per pint. A third preservative, which contained 100 per cent. of boric acid, was advertised as "harmless and effectual," and the directions for its use were for milk seven grains per pint, but "for small consumers a teaspoonful will be sufficient for a quart of milk," for cream nine grains per pint, and for sausage 45 grains per pound. Another preservative which had not been analysed was said to be "totally harmless to the most delicate child" and the directions for its use were for milk 11 grains per pint and for butter 125 grains per pound. His experience went to show that preservatives were more frequently present in adulterated than in pure articles. He had attempted to show that this increasing and indiscriminate use of preservatives was not without effect upon public health. He had prepared a table showing the infantile mortality in England and Wales during the 20 years 1878–1897 arranged in five-yearly periods. For comparison the general death-rate of the same period was also shown:—

Five-yearly period. (1)	Number of deaths of infants under one year per 1000 births. (2)	(3)	General death-rate per 1000 living (all ages). (4)
1878–82	142	Corresponding to the following increased loss of infant life in actual numbers.	20·3
1883–87	143	4,481	19·4
1888–92	146	17,788	19·0
1893–97	152	45,641	17·8

It would be seen that instead of an improvement which one might expect from modern improved sanitary conditions there had been an increase in the sacrifice of infantile life and that this increase was coincident with a steady decrease in the general death-rate. The question, therefore, arose, What were the factors which produced this infantile mortality? Medical men might say something about the employment of mothers in factories and other places, but this employment went on all the year round, while the increase in the infantile mortality was practically limited to the third quarter of the year. This quarter was the quarter in which the maximum amount of milk was used amongst children, and he had endeavoured to show that the use of preservatives in milk might at any rate play a part in bringing about the mischief. In another table he displayed the rates of infantile mortality during one eight-year period (1891–98) in England and Wales and various parts of the country—also the quarterly distribution of the same:—

—	Number of infant deaths (under one year) per 1000 births. Eight years 1891–98.	Quarterly distribution of such infant deaths. Average of eight first quarters.	Average of eight second quarters.	Average of eight third quarters.	Average of eight fourth quarters.
England and Wales	152	147	129	183	150
33 large towns ...	171	152	141	229	163
Five county boroughs in West Riding of Yorkshire ...	176	154	147	239	165
West Riding Administrative County	154	145	139	171	161

It would be found that not only was practically the whole of the increase in the third quarter of the year, but that during the last eight years there had been an improvement in the first and second quarters, while the fourth quarter had been stationary. Considering the great sanitary progress and the improvement in the general death-rate this increase in the infantile mortality in the third quarter of the year must be due to something unusual, and the question became, What was it that was unusual? As far as he could see the use of preservatives was unusual and was increasing every day and therefore he was inclined to put down some at any rate of this increase in infantile mortality to excessive use during the third quarter of the year of preservatives in milk.

By Dr. BULSTRODE: He did not attempt to establish that autumnal diarrhœa was due to the use of preservatives in milk, but that it might be a factor in preventing a fall in the mortality from infantile diarrhœa. Preservatives prevented the milk from becoming manifestly sour, but while that was so they might not prevent other action going on in the milk which was deleterious to the infant consuming the milk. His experience was that in hot weather over 70 per cent. of the samples had preservatives, while in winter they found that practically none had them. He intended to carry his investigations further and hoped to get more information which would enable him to decide whether preservatives were only used in milk in hot weather. His view was that in the present state of things infants and invalids suffered and that if the use of preservatives went on unchecked healthy adults would also suffer.

By Dr. TUNNICLIFFE: In his district tinned milks were largely used in some places, but not by the class of people among whom the infantile mortality was greatest.

Mr. OTTO HEHNER (public analyst for several districts of England) next gave evidence. He had devoted special attention, he said, to butter and had found that at least 90 per cent. of the samples he had examined contained borax preservatives. Nearly all the butter in the rural districts of the south of England was coloured, but in the Midlands he had sometimes found uncoloured butter. A few years ago annatto was the colour used, but now the practice was to use aniline dyes, though not in quantities to be injurious to health. He frequently found colouring matter in milk, and while he did not like the practice he did not regard it as a very urgent matter.

The Committee then adjourned.

MONDAY, JAN. 22ND.

The Committee held another meeting to-day when Sir HERBERT MAXWELL again presided.

Mr. H. DROOP RICHMOND, resident analyst to the Aylesbury Dairy Company, London, was the first witness examined, and in answer to Professor THORPE he said that although the Aylesbury Dairy Company did not employ preservatives in milk or cream or in any butter made by them he had given considerable attention to the subject and he had prepared for the Committee a table showing the results of analyses with reference to boric acid and salicylic acid. In his experience he found that the preservatives most favoured were a mixture of borax and boric acid and formalin. When the latter was added to milk it appeared to toughen the proteïds, probably the casein chiefly. That was shown by the fact that when the fat was heated with hydrochloric acid the casein took very much longer to be dissolved upon boiling than if no formalin had been added. He should say that first of all a combination had taken place and there was some ground for assuming that the casein was in a more insoluble form and probably a form more difficult of digestion. He should not like, however, to say that this conclusion was entirely justified. In cream there was sometimes used a solution of lime and cane sugar which acted as a preservative, retarding the time when the evidence of curdling and souring was shown to the consumer. This solution also made the cream look thicker. At one time the Aylesbury Dairy Company added 0·2 per cent. of boric acid to cream, but they no longer did so. They found that the presence of the preservative was objected to by a considerable section of the public, and after experimenting they discovered that they could supply cream in a fresh state without it. At one time they used boric acid for butter. There were two ways which they had of using it; one was to wash the butter with a solution directly after churning it and the other was to mix the acid with the butter and work it in. Now, however, they no longer used preservatives in the butter which they made. The butters from France

which they imported were habitually preserved, and having regard to the methods of production and collection in that country he was afraid that unless some preservative were added there might be trouble in regard to keeping. He did not think, however, that the use of boric acid compounds was absolutely necessary, even in these butters, for a small percentage of salt could be added with equally good results. Up to last year he found that Australian butters were invariably preserved, but last year he met one or two samples which were free from preservatives. These samples when they reached the laboratory were in as good condition as the others, and therefore he should infer that there was no need for preservatives in Australian butters. Boric acid and salicylic acid were preservatives which could be estimated with ease and accuracy, but in the case of formaldehyde it could not at the present moment be estimated quantitatively.

By Dr. BULSTRODE: His opinion was that if milk would keep sweet for 18 hours that was sufficient for their trade, and he should consider that a fair limit for all classes of trade. He did not see why milk should be kept longer than 18 hours. At a temperature of 70° F. milk would keep for 34 hours before it turned sour, at a temperature of 80° for 22 hours, and at a temperature of 90° for 15 hours. In the hottest weather of last year the maximum temperature of milk as it arrived at their dairy at Bayswater was 77° F. and of milk after it had gone on a round and been brought back to the dairy 83° F. He thought that he should be right in assuming that the average temperature would not have been higher than 80° F. In these circumstances they found that they could supply fresh milk and allow customers three or four hours at least for its consumption.

By the CHAIRMAN: Instead of limiting the amount of preservative used he should rather advocate prohibition. The preservatives came into the hands of dairymen under fancy names and unless they had special information they did not know the quantity of the preservative they were using or its nature, and not only so but the same article might be dosed several times by different people. The only colouring matter used by the company was annatto.

Mr. HATTERSLEY, managing director of the Aylesbury Dairy Company, said, in reply to the CHAIRMAN, that the greater part of their milk-supply came from Berkshire and Wiltshire, though some came from a county so remote from London as Cheshire. All the milk came free from preservatives. The opinion of the company was that preservatives were not necessary. During 1899 they had well over 5,000,000 deliveries of milk and only 78 letters of complaint about sourness, which showed, he thought, that the milk gave satisfaction to their customers. He considered that they were fairly well served by the railway companies. Occasionally it happened that the milk was sent to London in a fish truck or in a waggon or van which had contained fish and in consequence the flavour of the milk was affected. In the contracts they made with the farmers they had strict provisions as to cooling the milk, for milk could not be brought to London from a distance in proper condition unless it had been carefully cooled. The demand for Pasteurised milk was small in London, though there was a considerable trade in sterilised milk. The company separated the cream at their dairy at Bayswater with the exception of one small lot which they obtained from a farm close to London, and they used no preservatives for the cream. In 1899 they had six letters of complaint about cream, which averaged about 0·05 per 1000 quarts of cream delivered. All the butter they made themselves was free from preservatives. With regard to the colouring of milk, they had tried several times to do without it, but customers objected and they had had to resume colouring. He regretted this much because he should greatly prefer to have the milk sold uncoloured.

By Dr. BULSTRODE: The company had kept butter in their own dairies for a fortnight without ice and he had no doubt if the methods of the French butter-making industry were altered the French butter could be imported into this country free from preservatives.

By Professor THORPE: Their milk-supply in a year amounted to 1,500,000 gallons and it came from about 50 farms whose average distance from London was from 70 to 80 miles. This supply was distributed among considerably over 100,000 persons.

Dr. DUPRÉ of the Home Office was next examined, and in answer to the CHAIRMAN he said he objected to preservatives in milk because in his opinion they did away with the guarantee of cleanliness. He took this objection quite apart from the question of harmfulness, about which, no doubt, there was great difference of opinion. Further, he thought it objectionable that a chemical substance should be mixed indiscriminately with food unknown to the consumer. Few people visited and inspected dairies, but every person knew when milk was sour, and this constituted a great protection; he objected to preservatives because they took away this protection. Having regard to the fact that milk was the only food of infants and invalids it was most important that it should be really good, and therefore he was more concerned about it than about the other articles in which they found preservatives.

The CHAIRMAN: Are you aware that preservatives are largely used in fish?

Dr. DUPRÉ: Yes, from hearsay; I have never got fish to analyse.

The CHAIRMAN: Would you think it important that it should be known?

Dr. DUPRÉ: Yes. I would have the same objection in the case of fish as I have in the case of milk. Fresh fish is a guarantee that it has been recently caught.

The CHAIRMAN: Are you aware that fish taken in the North Sea are put in formalin and kept for many days and even weeks before being brought to the market?

Dr. DUPRÉ: I did not know that.

The CHAIRMAN: If that were proved to be the case would you think it a desirable thing?

Dr. DUPRÉ: I should think it in the highest degree undesirable.

The CHAIRMAN: Have you never experienced a hard sole?

Dr. DUPRÉ: Yes; but I never attributed it to any keeping of that kind.

Further examined by the CHAIRMAN, Dr. DUPRÉ said that in his opinion no colouring matter which was considered poisonous should be employed in any quantity. He should certainly not allow copper to be used for the colouring of peas, for while one person might take with impunity a certain quantity of copper a much less quantity might cause serious mischief to another person. He should prohibit the use of copper in peas simply because one never knew how it might affect people. A mere declaration that the peas were artificially coloured would not, in his opinion, meet the case nor would a declaration that they were coloured with copper, because the consumer might not be aware that copper was poisonous. If the declaration were to the effect that the peas were coloured with a poisonous matter then it might have some effect.

By Dr. TUNNICLIFFE: He considered it to be the duty of people who employed colouring matters to prove that they were not injurious and if they failed to do so to give up the practice.

Mr. JOHN MITCHELL HARRIS, managing director of C. and T. Harris and Company, bacon curers, Calne, Wiltshire, and deputy chairman of the Bacon Curers' Association, gave evidence as to the use of borax in the bacon industry. He stated that his own firm employed nothing beyond salt and saltpetre and found no need for borax, even in connexion with their export trade.

The Committee adjourned, to meet again at the end of a fortnight.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BAILEY, BERNARD, E. G., M.R.C.S., L.R.C.P., has been appointed Second House Physician for the City of London Hospital for Diseases of the Chest, Victoria Park, E.

BLAIR, A. B., M.B., C.M. Edin., has been appointed Medical Officer for the Banwell (first) Sanitary District of the Axbridge Union, vice D. Lawson, resigned.

DECK, E. J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the No. 2 Sanitary District by the Hastings Board of Guardians.

FORREST, J. S., L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Medical Officer and Public Vaccinator by the Alnwick Rural District Council.

FRASER, S., M.B., C.M. Edin., has been appointed Medical Officer for the Edmonton Sanitary District of the Edmonton Union, vice J. Hodges.

HEATON, GEORGE, M.B., B.Ch. Oxon., F.R.C.S. Eng., L.R.C.P. Lond., of 33, Temple-row, Birmingham, has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, and to act for County Court Circuit No. 21.

HEDLEY, W. F., M.B. Edin., L.R.C.P., L.R.C.S., L.F.P.S. Glasg., has been appointed Medical Officer for the Hallaton Sanitary District of the Uppingham Union, vice H. A. Cruttwell, resigned.

HIGGINS, ALEXANDER G., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to the West Kent General Hospital, Maidstone, vice F. T. Travers, resigned.

HOPE, A. A., M.B., B.S. Durh., has been appointed Medical Officer for the Fifth Sanitary District of the Daventry Union, vice F. W. Fowke, resigned.

JONES, CHARLES STURGES, M.R.C.S. Eng., L.S.A., has been re-appointed Medical Officer of Health for Chichester.

LAMONT, J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer to the Poplar Workhouse, London.

LIVERSIDGE, WM., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed a Civil Medical Officer, and has proceeded to the seat of war, South Africa.

LOW, R. B., M.D. Edin., D.P.H. Camb., has been appointed an Assistant Medical Officer to the Local Government Board.

MCCALL, ANTHONY, M.D. Glasg., has been appointed Surgeon to the Throat and Ear Department of the Boscombe Hospital, Bournemouth.

MACKIE, G., M.B., C.M. Aberd., has been appointed Assistant Medical Officer for the Infirmary and Workhouse of the Parish of St. George-in-the-East, London, vice U. K. Tebay, resigned.

MANBY, E. P., M.D. Camb., M.R.C.S., D.P.H., has been appointed an Officer on the staff of Medical Inspectors by the Local Government Board.

NEVINS, J. E., M.B. Lond., M.R.C.S., has been appointed Medical Officer for the Workhouse, Liverpool.

PARSONS, H. F., M.D. Lond., M.R.C.S., D.P.H. Cambridge, has been appointed Assistant Medical Officer and Medical Inspector for General Sanitary Purposes to the Local Government Board.

PERCIVAL, A. S., M.B. Camb., has been appointed Honorary Surgeon to the Newcastle Eye Infirmary.

POWER, W. H., M.R.C.S., has been appointed Medical Officer to the Local Government Board, vice the late Sir R. Thorne.

REED, W. H., M.R.C.S., has been re-appointed Medical Officer of Health by the Westbury and Whorwellsdown Rural District Council.

PRINT IN BINDING

RHYS, WATKIN LLEWELLYN, L.R.C.P. Lond., M.R.C.S., L.S.A., has been appointed Medical Officer and Public Vaccinator for the Aberdare District by the Merthyr Tydfil Board of Guardians, vice D. Davies, resigned.

RIDLEY, WALTER, M.B., M.S. Dunelm, F.R.C.S. Eng., has been appointed Surgeon to the Royal Infirmary, Newcastle-on-Tyne, vice Professor Page, retired.

SMALLWOOD, SAVAGE, M.A., M.B. Oxon., F.R.C.S., has been appointed Surgeon to the Wolverhampton Hospital for Women.

STAMPER, J. T., Civil Surgeon, has been appointed to do duty in connexion with the medical charge of Pembroke Dock.

SUTTON, C. R. A., M.D. Camb., has been appointed Medical Officer for the Seventh Sanitary District of the Bromley Union, vice F. Shapley.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BATH GENERAL OR ROYAL MINERAL WATER HOSPITAL, Bath.—Resident Medical Officer, unmarried. Salary £100 per annum, with board and apartments.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Birmingham.—Assistant House Surgeon. Salary £60 per annum, with apartments and board.

BOLTON INFIRMARY AND DISPENSARY.—Junior House Surgeon for twelve months. Salary £80 per annum, with apartments, board, and attendance.

BOOTLE BOROUGH HOSPITAL, Liverpool.—First and Second House Surgeons. Salaries, senior £80, senior £50 per annum, with board, lodging, and washing. Apply to the Chairman, Hospital, Derby-road, Bootle.

BOROUGH OF SOUTHPORT.—Medical Officer of Health for the Borough. Salary £500 per annum. Apply to the Town Clerk, Town Hall, Southport.

BRISTOL ROYAL INFIRMARY.—Resident Officer. Salary £40 per annum, with board, lodging, and washing.

BRIXTON DISPENSARY, Water-lane, Brixton.—Resident Medical Officer for two years, unmarried. Salary £150, with furnished apartments, attendance, coals, and gas.

CARDIFF INFIRMARY.—Assistant House Surgeon and Assistant House Physician for six months each. Salaries at the rate of £50 per annum, with board, washing, and apartments.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at the rate of £50 per annum, with board and residence in the hospital.

CITY OF LIVERPOOL.—Assistant to the Medical Officer of Health. Salary £350 per annum, subject to certain conditions. Applications to the Town Clerk, Town Clerk's Office, Liverpool.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Second House Surgeon for one year, unmarried. Salary £60 per annum, with board, lodging, and washing.

EASTERN DISPENSARY, Leman-street, Whitechapel, London.—Physician. Honorarium £50 a year.—Apply to the Secretary, 60, Great Prescott-street, London.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London.—Surgeon to Out-patients.

EYE AND EAR HOSPITAL, Tunbridge Wells.—House Surgeon for one year. Salary £60, with board and residence.

GENERAL INFIRMARY, Leeds.—Resident Ophthalmic Officer. Salary £50 a year, with board and lodging.

GRAVESEND HOSPITAL.—House Surgeon. Salary £80 per annum, with board and residence.

GROVE HALL ASYLUM, Bow, London.—Junior Assistant Medical Officer. Salary at the rate of £120 per annum, with board, apartments, washing, and attendance.

HOSPITAL FOR DISEASES OF THE THROAT, Golden-square, London.—Registrar and Pathologist. Honorarium of 25 guineas per annum.

HOSPITAL FOR WOMEN, Soho-square (THE LONDON SCHOOL OF GYNÆCOLOGY).—Clinical Assistantships.

HULME DISPENSARY, Dale-street, Stretford-road, Manchester.—House Surgeon. Salary £150 per annum, with apartments, attendance, coal, and gas.

LEICESTER INFIRMARY.—House Physician for twelve months. Salary £100 per annum, with board, apartments, and washing.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY, Loughborough.—Resident House Surgeon. Salary £100 per annum, with furnished rooms, attendance, and board.

MASON UNIVERSITY COLLEGE, Birmingham.—Lecturer on Osteology and Chief Demonstrator of Anatomy.

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officer (Junior) at the Asylum at Caterham, in Surrey, unmarried. Salary £120 per annum rising to £150, with board, lodging, attendance, and washing (subject to statutory deduction). Apply to the Clerk to the Board, Norfolk-street, Strand, London.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road.—Junior Resident Medical Officer for six months. Salary at the rate of £40 per annum, with board, attendance, and washing.

NOTTINGHAM CITY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £125, with board, apartments, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

ROYAL CORNWALL INFIRMARY, Truro.—House Surgeon, unmarried. Salary £85, with board (excluding stimulants) and apartments.

ROYAL HOSPITAL FOR SICK CHILDREN, Glasgow.—Honorary Oculist at the Dispensary.

ROYAL INFIRMARY, Sheffield.—House Surgeon for three years. Salary £120 per annum, with board, lodging, and washing.

ROYAL SOUTH HANTS INFIRMARY, Southampton.—Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with rooms, board, and washing.

SALISBURY INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, London.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at the rate of £2 per mensem, with residence, board, and washing.

UNIVERSITY COLLEGE, London.—Assistant Surgeon and Assistant Physician.

WEST KENT GENERAL HOSPITAL, Maidstone.—Assistant House Surgeon for six months. Honorarium at the rate of £50 per annum, with board and residence.

Births, Marriages, and Deaths.

BIRTHS.

APLIN.—On Jan. 22nd, at Hill House, Sneinton, Nottingham, the wife of Dr. Aplin, medical superintendent, Notts. County Asylum, of a daughter (Alys Arundel).

BODDIE.—On Jan. 23rd, at Bruntsfield place, Edinburgh, the wife of George P. Boddie, M.B., of a son.

BRODIE.—On Jan. 16th, at Fernhill, Wootton-bridge, Isle of Wight, the wife of C. Gordon Brodie, F.R.C.S., of a daughter.

BUSTEED.—On Jan. 21st, at Ellesmere, Shropshire, the wife of John Hancock Busteed, L.R.C.P., L.R.C.S., L.S.A., of a daughter.

FISON.—On Jan. 20th, at The Cedars, Manor-road, Salisbury, the wife of Edmund Towers Fison, M.D., of a son.

MACLEOD.—On Jan. 24th, at Harley-street, W., the wife of J. M. H. MacLeod, M.D., of a son.

MARRIAGES.

BLAIR—SHERIFF-MACGREGOR.—At 32, Athole-gardens, Glasgow, on Jan. 16th, by the Rev. David Strong, D.D., Hillhead, and Rev. William Wilson, M.A., Trossachs, Andrew Buchanan Blair, M.B., C.M., Banwell, Somerset, to Constance Elizabeth, daughter of the late George Sheriff-Macgregor, Esq., Glengyle, Perthshire.

BRIDGEFORD—CUMBERLAND.—On Dec. 13th, 1899, at St. George's Church, Queen's Cliff, Victoria, by the Rev. H. Wilkinson, Walter Bridgeford, M.R.C.S. Eng., and L.R.C.P. Ed., of Boulder, West Australia, to Florence Landale, daughter of the late Captain R. F. W. Cumberland, H.M.'s. 96th (Manchester) Regiment.

MEAKIN—BALL.—On Jan. 6th, at St. Giles's Church, Cambridge, by the Rev. F. Buxton, vicar, assisted by the Rev. Arthur Cooke, M.A., of King's College, Harold Budgett Meakin, M.D. Lond., of the Indian Medical Service, son of the late Edward Meakin of Hampstead, to Frances Amelia, elder daughter of Sir Robert Ball, Lowndean Professor of the University of Cambridge.

WALKER—GREEN.—On Jan. 13th, at St. John the Baptist's, Paignton, Cyril Hutchinson Walker, M.B., younger son of the Rev. John Walker, rector of Bradwell, Suffolk, to T. Caroline, eldest daughter of the late Rev. J. H. B. Green, rector of Normanton, Ashby-de-la-Zouch.

DEATHS.

ADNEY.—On Jan. 17th, at Whittlesey, Cambs., Alfred Adney, M.R.C.S., aged 76.

BOND.—On Jan. 13th, 1900, at Greenwich Infirmary, Harry Bond, M.R.C.S., L.R.C.P. (St. Bartholomew's Hospital), of pneumonia after a short illness, aged 28 years.

BURGER.—On Jan. 21st, at Finsbury-square, Alexander Burger, M.D., suddenly, aged 61.

DUNBAR.—On Jan. 19th, Robert Pearson Dunbar, M.D., Park House, Blackburn.

EASBY.—On Jan. 23rd, William Easby, M.D., L.R.C.P., L.M., L.R.C.S., of 6, Chatsworth-road, Brondesbury, N.W., late of Peterborough, aged 55 years.

VERNON.—On Jan. 16th, at Shipbrook, Cambridge-road, Southport, Henry Hannotte Vernon, M.D., F.R.S.E., aged 68 years. For 27 years medical officer of health for Southport.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

QUACKS AND THE WORKMEN'S COMPENSATION ACT.

AT the Porth County Court last week a collier claimed under the Workmen's Compensation Act half of his wages for the 14 weeks of enforced idleness due to a slight accident which had happened to him in the colliery workings, from the roof of which a stone had fallen on to his hand. He was attended by the works surgeon, Mr. Ivor Lewis, who found at the and of about 10 days that there was a collection of pus on the arm which it was necessary to let out, but the collier was very much averse to this treatment and preferred rather to place himself under the care of a certain old woman in the village who was reputed to be in possession of a "salve" which would speedily effect a cure. The result of this decision was not quite so serious as it might have been, but it was three months before the hand returned to its normal condition. In assessing the amount of compensation to which the claimant was entitled the judge very properly took into consideration the fact that the man wilfully prolonged his absence from work, and awarded him only eight weeks' half-pay instead of the 14 weeks claimed. This decision should serve to impress other workmen similarly circumstanced that in their own interests they had better submit to recognised and rational methods of treatment rather than to an irresponsible empiric.

"GIVING NATURE A CHANCE."

To the Editors of THE LANCET.

SIRS,—You allude to me by name in THE LANCET of Jan. 20th (p. 211), and I ask in common fairness to be allowed a word of protest against one sentence. You say, "It is cruelty thus to juggle with the hopes of the sick." The word "juggle" implies some trickery and unfairness. I venture to say that my conduct in expressing an opinion that a large proportion of the crippled children I saw were not incurable was at least honest. I may be wrong, but until some demonstration of error is forthcoming I protest against your charge of "cruelty" and "jugglery."

I am, Sirs, your obedient servant,

Park-lane, W, Jan. 23rd, 1900. JOHN ATKINSON.

THE ARRANGEMENTS AT THE EXAMINATIONS OF THE CONJOINT BOARD.

To the Editors of THE LANCET.

SIRS,—I would venture to suggest that the arrangements in the Final College (Medicine) Examination should be so altered as not to keep the candidates an inordinate length of time in waiting for their cases. I myself, along with other students, had to remain in the waiting-room last Monday afternoon from 2.30—the hour given on the card—until nearly 3.40 before being called to the cases. All this was certainly not very conducive to a calm mental condition, especially as the only method of passing the time consisted in perusing one or two evening newspapers. The arrangements for the "vivâs" in the evening were much better, the candidate having only to wait five or ten minutes before being called.

I am, Sirs, yours faithfully,

Jan. 23rd, 1900. GROWLER.

THE GIVING OF ANÆSTHETICS BY UNQUALIFIED PERSONS.

To the Editors of THE LANCET.

SIRS,—A friend of mine has written asking my advice and I should be obliged if you will give me your opinion in the matter. He is a chemist in a country village in Scotland, and the medical man there has lately been asking him to give chloroform in minor operations. He has done so in several cases but does not feel easy about it and wishe to know whether he ought to and what his position would be in the case of any accident happening with the anæsthetic. The medical man has assured him that he takes all responsibility, and that there is no difficulty in the matter. Will you kindly give me you opinion on the matter? Thanking you in anticipation,

I am, Sirs, yours faithfully,

Jan. 21st, 1900. R.

*** The medical man cannot assume the responsibility supposing "any accident happened." No anæsthetic should ever be administered by an unskilled person except under circumstances of extreme urgency.—ED. L.

INSECTS IN THE EXTERNAL AUDITORY MEATUS.

To the Editors of THE LANCET.

SIRS,—I think the account of the following case may be of interest to the members of the profession as showing the protective nature of the ceruminous exudation of the ear. In August, 1899, a patient came to me complaining that on the previous evening an insect had flown into the external auditory meatus of one ear. He had suffered for some little time afterwards from an intolerable "buzzing" noise in that ear. As he was out on a cycling expedition he got one of his companions to pour into the meatus some ordinary paraffin, but no insect could be detected. The patient tells me that from that time he gradually became more and more deaf on the side mentioned, but took no steps to remedy the inconvenience. A few days ago he began to suffer from pain, and, thinking there might be some wax impacted, he poked about with a pin, ultimately bringing out a mass of wax from the ear on examining which a large-sized moth was seen to be embedded in it, very distinctly preserved. He is now quite relieved from his deafness and looks on the "moth as somewhat of a" curiosity.

I am, Sirs, yours faithfully,

W. E. MAW, L.S.A. Lond.

Rawdon, via Leeds, Jan. 21st, 1900.

A DROLL VACANCY.

A CORRESPONDENT informs us that he recently inserted an advertisement in the press to the effect that as a doubly qualified locum tenent he would be prepared to accept a vacancy at the end of January. In reply to his advertisement he received the following remarkable letter the names and addresses in which we omit:—

Normanton
January 15th 1900.

Dear Sir

Hearing of a situation concluding to the Medical Staff. I write to you, Kind Sir wishing to fulfil that Profession. My Name is T —— F—— H —— living in the Township of Normanton and is well aquainted with the Head Doctor at Normanton Doctor M ——. I would be thankful to you if this letter suit. I am a Single Gentleman, and would do the very best I could to please you. I am 25 years of age.

Hoping to hear from you soon,
I, Remain
Your's Sincerely
Doctor H ——.

Not the least funny part of "Doctor" H——'s letter is that he considers himself to be a "Vacancy."

THE ANÆSTHETIST'S POSITION TOWARDS QUACK DENTISTRY.

THE *Birmingham Daily Mail* for Jan. 11th contains the following advertisement. As we do not find any medical man or dentist upon the Register bearing the name of Molar, we would suggest that the medical man associated with Molar as anæsthetist should cease from giving his services over the seed shop.

MOLAR'S
ARTIFICIAL TEETH
ON THE EASY PAYMENT SYSTEM,
20, HIGH STREET, BULL RING
(Four doors from New Street Corner),
A COMPLETE SET FOR ONE GUINEA.
A SINGLE TOOTH, 2s. 6D.
A PERFECT FIT GUARANTEED.

ANY SET of MOLAR'S ARTIFICIAL TEETH not giving full satisfaction or fulfilling their proper functions within three months of fitting will be REMADE FREE OF CHARGE.

ALL MOLAR'S ARTIFICIAL TEETH are REPAIRED FREE for 12 Months.

NO Extractions of Loose Teeth or Stumps necessary. Soft Palates especially made for tender gums.

OLD TEETH BOUGHT OR REMODELLED
TO SUIT ANY MOUTH. ADVICE FREE.

ANÆSTHETICS BY MEDICAL MAN.
PAINLESS EXTRACTIONS BY GAS.
1s. 6D.
TEETH STOPPED CROWNED, & SCALED.
MOLAR'S,
20, HIGH STREET, BULL RING
(OVER THOMSON'S SEED SHOP).
HOURS, 10 TO 6 DAILY. SATURDAY, 10 TO 5.

BULLET WOUNDS AS REPRESENTED BY NEWS COMPOSITORS.

THE *British and Colonial Printer* of Jan. 6th, 1900, has an amusing notice of how a story may differ from the original narrative when it has had several independent and successive renderings. This, says our contemporary, "holds good, though in a somewhat different

manner, for the representation of Sir W. MacCormac's description of a bullet-wound in THE LANCET, as quoted by the medical organ's contemporaries. The *Globe* of the 22nd inst. gives the description and reproduces the eminent surgeon's sketch as near to size as possible, using for the purpose a good bold block cap of *two-line brevier*; when, however, the *Daily Telegraph* deals with the subject on the next day, lo! a *two-line minion* cap is taken! If the proportionate diminution goes on as the type of the paper decreases, we shall find that, like in the story, we shall hardly recognise our old and original friend; and the Mauser wound will resolve itself into a 'full point,' and we shall erroneously be led to believe that a modern bullet merely inflicts a pin-prick."

F.C.S.M.

To the Editors of THE LANCET.

SIRS,—I was called to visit a patient, aged 69 years, at 5 A.M., last Thursday, the 11th inst., and found she had died. She had been suffering from pulmonary trouble for some time and was supplied with medicine by the man whose label is enclosed. At the inquest held on this case death was found to be due to natural causes. She was taking his medicine up to the time of her death and had not consulted a qualified medical gentleman.

I am, Sirs, yours faithfully,

Commercial-road Limehouse, E., Jan. 14th, 1900. A. W. MILLER.

The following is a reproduction of the label referred to.* The quantity of and hours for taking the dose are filled in in pencil.

1 or 2 table-spoonful to be taken every 2 or 4 hours.

J. C. PURDUE, F.C.S.M. LOND.

Member of the Magnetic and Botanic School of Safe Medicine, London, founded 1893.

All kinds of Medicinal and Herbal Preparations, kept in Stock.

ADVICE GRATIS DAILY.

REQUISITES FOR INVALIDS, FOR SALE OR HIRE.

7, GALT STREET, near Salmon Lane, LIMEHOUSE.

Formerly 5½ years Manager of the Medical Hall.

PUBLIC AND POOR-LAW DISPENSERS.

To the Editors of THE LANCET.

SIRS,—May I through the medium of your correspondence column ask any past or present Public or Poor-law dispenser who has not received a copy of the rules of the Public and Poor-law Dispensers' Association to communicate with me at the address below or to attend our next meeting on Jan. 31st, at 8 P.M., at St. Bride's Institute, Ludgate-circus, E.C. Thanking you in anticipation,

I am, Sirs, yours faithfully,

G. F. FORSTER, M.P.S.,

Honorary General Secretary Public and Poor-law Dispensers' Association.

c/o The Shuttleworth Club, Fye Foot-lane, Queen Victoria-street, E.C., Jan. 22nd, 1900.

THE OPEN-AIR TREATMENT OF PHTHISIS.

To the Editors of THE LANCET.

SIRS,—Could you or any of your readers tell me where a patient (gentleman) in rather poor circumstances could obtain the open-air treatment for phthisis? Davos and other places of that standing seem too expensive, but I hear there is a society recently formed for assisting people to obtain the open-air treatment. Is this so? and if so, could anyone favour me with the address of the secretary?

I am, Sirs, yours faithfully,

Jan. 23rd, 1900. W. R. K.

**** Lists of institutions will be found in THE LANCET of Sept. 9th, 1899, p. 724, and Sept. 23rd, 1899, p. 851.—ED. L.

THE NÆVUS OF PATRIOTISM.

WE extract the following story from the *Cape Argus*, a paper published in Cape Town:—

SINGULAR FREAK OF NATURE.

A baby (girl) born lately in one of the suburbs has a distinct mark (strawberry colour) on the right shoulder. The mark is the facsimile of the British coat-of-arms. So distinct are the several outlines, &c., that the very features of the animals are visible, the tail, and especially the horn of the unicorn standing out prominently, but not quite as conspicuous as the crown. The father of this wee mite is naturally very proud of his offspring and prophesies great things for her future on account of this singular distinction. She no doubt will grow up a loyalist.

This is a distinct advance upon the old-fashioned strawberry mark, and in former times such an occurrence would have been taken as a portent of the assured success of the British army. In these unromantic days, however, it is probable that some matter-of-fact practitioner will propose the removal of the British coat-of-arms by means of electrolysis.

VOMITING OF PREGNANCY.

To the Editors of THE LANCET.

SIRS,—In reply to the query of "Obstet." in THE LANCET of Jan. 20th (p. 212), as to treatment of sickness in early pregnancy. I advise him to give twice daily before meals the following mixture: Liquid extract of ergot, five minims; water, half an ounce. I have seldom found it to fail after a few days in relieving, if not in entirely curing; the sickness. The same prescription, with the addition of nux vomica three minims, is often very useful in checking the sickness of the menstrual period.

I am, Sirs, yours faithfully,

South Lodge, Ascot, Jan. 23rd, 1900. A. GORDON PATERSON, M.D.

Physician and Surgeon.—There is no law to prevent persons, however ignorant, from practising medicine or surgery at their own risk, provided that such persons do not use titles to imply that they are properly qualified members of the medical profession. The General Medical Council has no power over unqualified persons.

"Bartholomew."—Our correspondent's questions cannot be answered upon his brief description of the case and without a knowledge of the patient's pecuniary circumstances. We shall be happy to publish a fuller statement.

X. Y. Z.—We cannot give an opinion upon the very slight information supplied. If our correspondent will favour us with a full account of the circumstances we shall be able to advise him.

Cornstalk.—(1) Yes. (2) Notice should be sent only to patients whose names are on the books. (3) We think so. (4) Yes. 5) It depends on the usual custom in the locality.

R. W. W.—A notice of the preparation appeared in THE LANCET of July 7th, 1883, p. 18.

Mr. M.—Our correspondent is advised to inquire of his own medical attendant.

Mr. J. M. Burke.—Our correspondent had better apply to his dentist.

R. W. D.—We think the notification is in perfectly correct style.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 25th, 1900.

Date	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb	Dry Bulb	Remarks at 8.30 A.M.
Jan. 19	30·25	S.W.	...	55	50	35	37	38	Hazy
,, 20	30·16	S.W.	0·23	51	47	38	43	44	Cloudy
,, 21	30·29	N.E.	...	52	51	33	34	35	Foggy
,, 22	30·07	S.W.	0·22	57	51	35	44	45	Overcast
,, 23	30·09	W.	...	63	54	45	47	49	Cloudy
,, 24	29·81	S.W.	0·02	63	55	47	48	49	Raining
,, 25	30·23	N.W.	0·03	70	51	43	42	44	Fine

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (31st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (1st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (3rd).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (1.30 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

THURSDAY (1st).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road).—8.30 P.M. Clinical Evening.

FRIDAY (2nd).—WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary, Greenwich-road, S.E.).—8.45 P.M. Paper:—Dr. S. Sunderland: Some Forms of Pelvic Pain in Women in which the Diagnosis was difficult. Dr. Herschell will demonstrate an Apparatus for Intra-gastric Shampoo, and the Three-way Tap for Lavage of the Stomach.

SOCIETY OF ANÆSTHETISTS (20, Hanover-square, W.).—8.30 P.M. Discussion on the After-effects of the Inhalation of Ether on the Respiratory System, opened by Mr. S. Rumboll (Leeds).

LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—4.30 P.M. Discussion and Vote upon the Desirability of there being separate Sections for Laryngology and Otology at Congresses and Association Meetings. 5 P.M. Cases shown by Dr. L. Lack, Dr. J. Horne, Dr. Cathcart, Mr. Wyatt Wingrave, and Mr. Waggett.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (29th).—LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—4.30 P.M. Dr. F. Potter: Examination of Ear. (Post-Graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC Chenies-street, (22, W.C.).—4 P.M. Dr. Galloway: Consultation. (Skin.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Saunders: Methods of Testing for Diphtheria and Typhoid.

TUESDAY (30th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. W. Miller Ord: Consultation. (Medical.)

WEDNESDAY (31st).—ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.). — 4.30 P.M. Dr. M. Dockrell: Erythema. (Post-graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Dr. G. H. Savage: Clinical Lecture.

THURSDAY (1st).—WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—5 P.M. Clinical Demonstration:—Mr. J. Cantlie: On the Surgical Treatment of Paralytic Deformities, with Illustrative Cases.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Barlow: Some Points in the Hygiene of Children.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Eden: Gynæcological Demonstration. (Post-graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC) 22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Saunders: Clinical Bacterial Tests.

FRIDAY (2nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. T. Collins: Consultation. (Eye, Ear, Nose and Throat.) 5 P.M. Mr. V. Cargill: Class. Demonstration III:—Practical Ophthalmology.

During the week marked copies of the following newspapers have been received: *Daily Express (Dublin), Eastern Morning News, Darwen News, Kent Argus, Weekly News (Broadstairs), Sussex Daily News, Birmingham Daily Post, Leicester Daily Post, New York Sun, Burton Mail, Lancashire Daily Post, Nottingham Daily Guardian, Liverpool Daily Post, Scotsman, West Morning News, Yorkshire Post, Times of India, Pioneer Mail, Bradford Observer, Gainsborough Leader, Daily Messenger (Paris), Glasgow Herald, Builder, Brighton Gazette, Architect, Citizen, Manchester Guardian, Bristol Mercury, Morning Herald, Devizes Advertiser, Leamington News Herald, Cape Argus (Cape Town), Leeds Mercury, Preston Herald, Ayrshire Post, Dewsbury Reporter, Rangoon Times, Victoria Daily Times, The Australian, United Service Gazette, The Cigarette World and Tobacco News, Oxford Times, The Dairy, Peterborough Express, Sanitary Record, Hertfordshire Mercury, Bolton Daily Chronicle, Reading Mercury, City Press, Local Government Chronicle, Mining Journal, Rangoon Gazette, Surrey Advertiser, Local Government Journal, Le Courrier de la Presse, Bury Free Press, English Gazette (Paris) Inventions, Swindon Advertiser, Bicester Herald, Willesden Chronicle* &c., &c.

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THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1899, which was completed with the issue of Dec. 30th, and the Title-page to the Volume, were given in THE LANCET of Jan. 6th.

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